



CRUSTACEAN ZOOPLANKTON COMMUNITIES
OF THE MUSKOKA-HALIBURTON
STUDY LAKES: METHODS
AND 1976-1979 DATA

G.G. Hitchin and N.D. Yan

DATA REPORT DR 83/9

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DATA REPORT SERIES

The data presented in this report were collected by staff of the Water Resources Branch of the Ontario Ministry of the Environment as part of the Lakeshore Capacity Study or the Acid Precipitation in Ontario Study. This unreviewed report does not necessarily reflect the views or opinions of the Ontario Ministry of the Environment.

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Crustacean Zooplankton Communities of the
Muskoka-Haliburton Study Lakes: Methods and 1976-1979 Data

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PREFACE

The unpublished Data Report Series is intended as a readily available source of basic data collected for lakes and watersheds in the Muskoka-Haliburton area of Ontario. These data were collected as part of the Lakeshore Capacity Study and/or the Acid Precipitation in Ontario Study.

The limnological portion of the Lakeshore Capacity Study (1975-81) was initiated to investigate the relationships between lakeshore development and lake trophic status in low ionic strength Precambrian lakes. The Acid Precipitation in Ontario Study (1979-present) was initiated, in part, to investigate the effects of the deposition of strong acids on aquatic and terrestrial ecosystems in Ontario. The primary findings of these studies have been and will continue to be published as reviewed papers and technical reports.

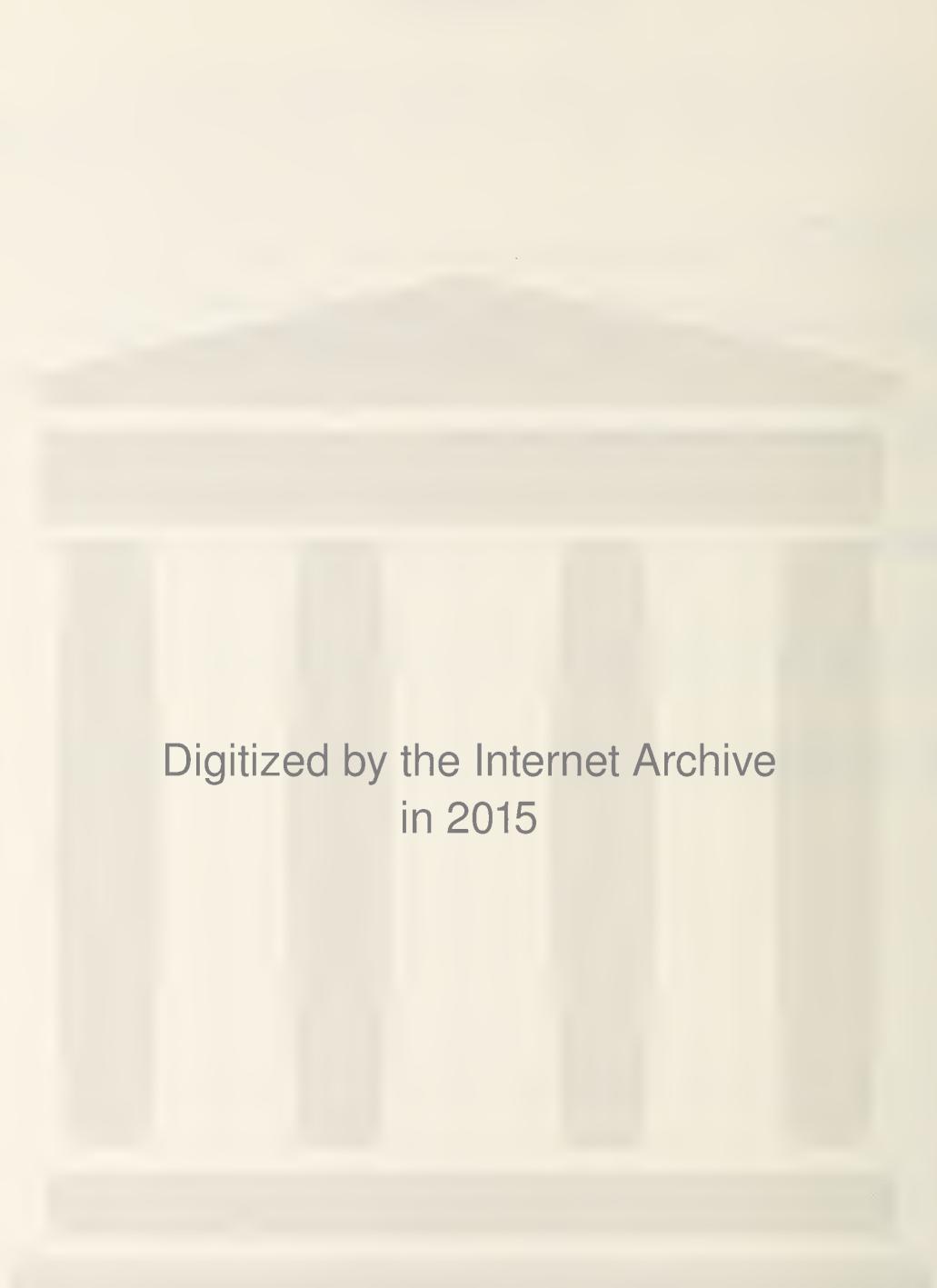
ABSTRACT

This report summarizes data on the crustacean zooplankton communities of the study lakes of the trophic status component of the Lakeshore Capacity Study.

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I. INTRODUCTION

As part of the ongoing limnological research performed on lakes in the Muskoka-Haliburton study area, crustacean zooplankton communities of several lakes have been monitored on a routine basis since 1976. The zooplankton data have been or are being collected for several purposes:

- 1) to attempt to improve predictability of chlorophyll concentrations and other indices of eutrophication
- 2) to attempt to develop empirical predictions of fish standing stocks
- 3) to provide comparative reference data for acidification studies on zooplankton in other areas
- 4) to provide baseline data for acidification studies in the Muskoka-Haliburton area.

In this report we detail methods routinely employed from 1976 to 1979 for collection, preservation, identification, enumeration and initial data treatment of crustacean zooplankton samples in the study lakes. Selected crustacean and some rotifer data for the study lakes for the 1976 to 1979 period are presented.

II. SAMPLE COLLECTION

Zooplankton samples were collected from 1976 to 1979 from Blue Chalk, Chub, Dickie, Harp, Jerry and Red Chalk Lakes, collectively termed the "A-lakes", and usually from 1976 to 1979 from Basshaunt, Bigwind, Buck, Crosson, Glen, Gullfeather, Little Clear, Solitaire and Walker Lakes, collectively termed the "B-lakes". Samples were generally collected at weekly intervals over the ice-free season in the "A-lakes" (Fig. 1). Sample frequency was lower for the "B-lakes". Samples were usually collected at monthly intervals over the ice-free season, but sampling frequency did vary considerably (Fig. 2). Samples were collected less frequently in the winter (Table 1).

In 1976 and 1977 samples were collected at 2-3 m intervals from the surface to 1 m above the bottom (1 mab) at the deepest point in each lake, using a 34 L self-closing transparent trap (Schindler 1969) equipped with 76 μm Nitex mesh. The sampling procedure was altered in 1978 and 1979 to reduce sampling time and increase the numbers of animals collected. A series of vertical tows of different lengths (to be discussed) were taken using the tow net portion of a Clarke-Bumpus sampler (mouth diameter 12.5 cm, net area 1530 cm^2) modified for vertical tows. Capture efficiencies of Clarke-Bumpus vertical tows are not different from plastic traps when corrected for filtration efficiency (Lewis 1978). Filtration efficiency was measured on each sampling occasion by comparing readings from the flow meter mounted in the mouth of the net obtained both with and without the tow net attached to the towing harness. Filtration efficiency was variable, ranging from 55 to 100% (mean of 77%), for example, in 1981.

The replicability of zooplankton biomass estimates derived from the vertical tows was measured in 1981 on Red Chalk Lake. The average standard deviation of triplicate tows from each of five stations sampled on each of six dates from June 9 to August 28 was 12.2% of the mean. Standard deviation was independent of mean biomass ($r^2 = 0.005$) over the range of mean biomasses observed (68-140 mg m^{-3}).

Samples from both trap and tow net collections were preserved immediately with a 4% neutralized, sugar-formalin solution.

Composited samples were obtained prior to enumeration. In 1976 and 1977, samples taken with the trap from individual depths were transferred to graduated cylinders and made up to constant volume with tap water. They were mixed by bubbling, then an aliquot which was proportional to the volume of the lake stratum from which the sample had originated was removed with a wide mouth pipette. The aliquots from the different depths were pooled to obtain a single morphometrically-weighted sample presumed to be representative of the entire lake. In 1978 and 1979 the composite sample for enumeration was obtained by pooling animals collected in several vertical tows to the surface from predetermined depths (all tows were taken within 20-30 m of the main sampling station). The lengths and numbers of tows were chosen so that when all collected samples were pooled, the proportion of the total theoretical sample

volume contributed by each depth stratum was equal to the proportional contribution of that stratum to the lake volume. Numbers and depths of tows and theoretical composite sample volumes are given in Table 2. For the latter (tow net) compositing method to be valid, filtration efficiency must be constant for all hauls. The cumulative length of tow varied from a minimum of 20 m on Dickie Lake to a maximum of 80 m on Red Chalk Lake (Table 2). Over this total length, filtration efficiency of the tow net was constant (Table 3).

III. SAMPLE ENUMERATION AND DATA TREATMENT

The monographs routinely employed for identifying Crustacea were those of Edmundson (1959), Brooks (1959) and Deevey and Deevey (1971). Copepod nauplii were counted but not identified. Copepodids were identified to the level of suborder. Three to four hundred crustaceans were usually enumerated in each sample (Table 4) giving a coefficient of variation (V) on the estimate of crustacean density of $\approx 5\%$ of the mean, assuming a Poisson distribution of the animals in the counting chambers ($V = 1/\sqrt{n}$, where n = number of animals counted). Rotifers were enumerated only for the "A-lakes" and only in 1977.

The average biomass of individuals of each species was determined for all the dominant planktonic Crustacea in the study lakes. To do this, 50-300 individuals (depending on their size) were chosen to equally represent all size-classes observed in the year. These were removed from the samples, rinsed four times in distilled water to remove adhering preservative, placed on pre-weighed coverslips, dried to constant weight (≈ 24 h) at 80°C and weighed to the nearest tenth of a microgram on a Sartorius electro-balance. Separate dry weights were obtained for naupliar, copepodid and adult copepods. Rotifer weights were generally taken from Lawrence et al. (in press).

Zooplankton data were routinely reported as density or were converted to biomass using the determined weights (Tables 5 and 6). Because the sampling frequency was not constant (Fig. 1, 2), averages of data for the ice-free season were determined by integration of density or biomass vs. time plots (i.e., averages were time-weighted).

REFERENCES

BROOKS, J.L. 1959. The systematics of North American Daphnia. Mem. Conn. Acad. Arts. Sci. 13:1-180.

DEEVEY, E.S. and DEEVEY, G.B. 1971. The American species of Eubosmina Seligo (Crustacean, Cladocera). Limnol. Oceanogr. 16:201-218.

EDMONDSON, W.T. [ed.]. 1959. Freshwater biology. 2nd ed. John Wiley and Sons, New York, NY. 1248 p.

LAWRENCE, S.G., MALLEY, D.F., FINDLAY, W.J. and DELBAERE, I.L. Determination of dry weight biomass of zooplankton species by estimation of volume. Env. Can., Fish. Mar. Serv. Tech. Rep. (in press).

LEWIS, W.M., Jr. 1978. Comparison of spatial and temporal variation in the zooplankton of a lake by means of various components. Ecology 59:666-671.

SCHINDLER, D.W. 1969. Two useful devices for vertical plankton and water sampling. J. Fish. Res. Board Can. 26:1948-1955.

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TABLE 1

Number of crustacean¹ zooplankton samples collected each year in the study lakes.

Lake	Ice-free Season				Winter Season		
	1976	1977	1978	1979	1976-77	1977-78	1978-79
<u>A-Lakes</u>							
Blue Chalk	6	23(15)	20	21	1	0	1
Chub	10	26(20)	24	23	3	0	1
Dickie	5	25(19)	27	22	3	0	1
Harp	6	27(20)	21	21	3	0	1
Jerry	7	26(18)	23	16	1	0	1
Red Chalk (main)	6	25(20)	24	20	1	0	1
Red Chalk (east)	0	23(23)	22	22	1	0	1
<u>B-Lakes</u>							
Basshaunt	0	0	7	5	1	0	1
Bigwind	2	4	6	5	0	0	0
Buck	2	4	7	4	0	0	0
Crosson	2	5	6	5	1	0	1
Glen	0	0	6	4	1	0	0
Gullfeather	2	3	7	5	1	0	1
Little Clear	1	4	9	4	2	0	1
Solitaire	0	4	7	4	0	0	1
Walker	1	4	7	4	2	0	1

¹ Number of samples enumerated for rotifers are indicated in parentheses.

TABLE 2

Lengths (from the stated depth to the surface) and numbers (in parentheses) of vertical tows of that length used to form composite samples in the study lakes. Theoretical sample volume is included.

Lake	Length (m)				Vol ¹ (L)
Blue Chalk	20(1)	15(1)	9(1)	4(2)	640
Chub	20(1)	15(1)	9(1)	4(2)	640
Dickie	8(1)	6(1)	4(1)	2(1)	250
Harp	30(1)	21(1)	13(1)	6(2)	930
Jerry	24(1)	18(1)	12(1)	6(1)	740
Red Chalk (main)	32(1)	24(1)	16(1)	8(1)	980
Red Chalk (east)	12(1)	9(1)	6(1)	3(1)	370
Basshaunt	19(1)	14(1)	9(1)	4(2)	610
Bigwind	25(1)	18(1)	11(1)	5(2)	790
Buck	29(1)	15(1)	10(1)	5(1)	610
Crosson	19(1)	14(1)	9(1)	4(2)	610
Glen	16(1)	12(1)	8(1)	4(1)	490
Gullfeather	8(1)	6(1)	4(1)	2(1)	250
Little Clear	12(1)	9(1)	6(1)	3(1)	370
Solitaire	27(1)	19(1)	13(1)	6(2)	880
Walker	10(1)	7(1)	4.5(1)	2(2)	310

¹ Assuming 100% filtration efficiency. Actual filtration efficiency varied from 50-100%.

TABLE 3

Changes in filtration efficiency of tow net during a series of vertical tows taken on four dates in 1981 on Red Chalk Lake.

Cumulative Length of Tows (m)	Filtration Efficiency (%)			
	July 21	July 28	August 5	August 25
15	72	72	70	66
60	72	72	69	68
105	67	72	69	71
150	72	72	68	68
195	70	78	54	73

TABLE 4

Average number of crustacean zooplankton enumerated in lakes in 1977 (trap collections) and 1978 (net collections). Standard error of average numbers enumerated is given in parentheses.

	Blue Chalk	Chub	Dickie	Harp	Jerry	Red Chalk (main)	Red Chalk (east)
1977	339(24)	351(15)	414(32)	420(27)	347(27)	316(14)	294(24)
1978	408(30)	393(25)	327(18)	436(16)	370(43)	489(44)	391(29)

TABLE 5

Dry weights ($\mu\text{g animal}^{-1}$) used for conversion of crustacean densities to biomass for the study lakes.

Species	Dry Weight	Comment
CLADOCERA		
<i>Acroperus harpae</i>	-	1
<i>Alona</i> sp.	2.50	2
<i>Bosmina longirostris</i>	0.54	3
<i>Ceriodaphnia lacustris</i>	0.50	2
<i>Ceriodaphnia pulchella</i>	-	1
<i>Chydorus bicornutus</i>	-	1
<i>Chydorus sphaericus</i>	0.90	4
<i>Daphnia ambigua</i>	3.00	2
<i>Daphnia catawba</i>	4.00	2
<i>Daphnia dubia</i>	4.50	3
<i>Daphnia galeata mendotae</i>	8.76	3
<i>Daphnia longiremis</i>	5.00	2
<i>Daphnia pulex</i>	8.09	2
<i>Daphnia retrocurva</i>	3.14	3
<i>Daphnia rosea</i>	8.00	2
<i>Diaphanosoma brachyurum</i>	1.89	3
<i>Eubosmina coregoni</i>	2.20	5
<i>Eubosmina longispina</i>	0.54	5
<i>Eubosmina tubicen</i>	0.40	2
<i>Holopedium gibberum</i>	10.94	3
<i>Ilyocryptus spinifer</i>	-	1
<i>Leptodora kindtii</i>	14.8	5
<i>Polyphemus hamulatus</i>	-	1
<i>Polyphemus pediculus</i>	28.0	5
<i>Scapholeberis kingi</i>	14.8	
<i>Sida crystallina</i>	12.25	3
CALANOIDA		
<i>Calanoid copepodid</i>	0.87	3
<i>Diaptomus minutus</i>	2.24	3
<i>Diaptomus oregonensis</i>	3.55	3
<i>Diaptomus sicilis</i>	13.7	3
<i>Epischura lacustris</i>	15.9	5
<i>Senecella calanoides</i>	30.0	2
<i>Senecella calanoides</i> copepodid	13.7	6
CYCLOPOOIDA		
<i>Cyclopoid copepodid</i>	1.50	3
<i>Cyclops bicuspidatus thomasi</i>	3.24	3
<i>Cyclops scutifer</i>	6.42	3
<i>Cyclops vernalis</i>	3.10	4
<i>Eucyclops agilis</i>	3.00	2
<i>Eucyclops speratus</i>	3.00	2
<i>Mesocyclops edax</i>	6.46	3
<i>Orthocyclops modestus</i>	4.00	2
<i>Paracyclops fimbriatus poppei</i>	-	1
<i>Tropocyclops prasinus mexicanus</i>	0.47	3
NAUPLII		
<i>Nauplii</i>	0.11	3

1 - dry weights not available (species usually $<0.1\%$ of total density)

2 - dry weights estimated by comparison with zooplankters of similar size and shape

3 - present study

4 - unpublished data, Strus, M.O.E.

5 - unpublished data, J. Cooley, Canada Centre for Inland Waters

6 - similar to largest *Diaptomus* species in study lakes

TABLE 6

Dry weights ($\mu\text{g animal}^{-1}$) used for conversion of rotifer densities to biomass in study lakes.

Species	Dry Weight ($\mu\text{g animal}^{-1}$)
Asplanchna sp.	-
Conochiloides natans	-
Conochilus unicornis	0.002
Filinia longiseta	0.037
Gastropus stylifer	0.015
Kellicottia longispina	0.016
Keratella cochlearis	0.010
Keratella quadrata	0.025
Notholca sp.	0.020 ²
Polyarthra vulgaris	0.034
Trichocerca cylindrica	0.071

¹ Dry weights were the arithmetic mean of the range quoted by Lawrence *et al.* (in press). Clay Lake data excluded for K. cochlearis because measured animals were smaller than specimens of Keratella taurocephala measured in other M.O.E. study lakes.

² Calculated from volume assuming dry weight = 0.07 x wet weight and assuming undried specimens had unit density.

TABLE 7

Summary of crustacean zooplankton group density and biomass in Blue Chalk Lake

	1976	1977	1978	1979	1977-79 mean
Density (animals L ⁻¹)	29.0	44.8	45.0	74.3	54.7
% Cladocera	11.0	4.5	10.4	5.9	6.9
% Calanoida	50.0	41.5	26.3	36.9	34.9
% Cyclopoida	9.8	8.1	16.7	10.1	11.6
% Nauplii	29.2	45.8	46.6	47.2	46.5
Biomass (mg m ⁻³)	39.2	44.7	56.0	69.9	56.9
% Cladocera	26.9	24.6	41.8	32.6	33.0
% Calanoida	58.5	53.0	28.1	37.9	39.7
% Cyclopoida	12.3	17.3	26.0	24.0	22.4
% Nauplii	2.4	5.1	4.1	5.5	4.9
Number of collections	6	23	20	21	
Number of species collection ⁻¹	10.5	9.4	11.5	10.8	

TABLE 8

Summary of crustacean zooplankton group density and biomass in Chub Lake

	1976	1977	1978	1979	1977-79 mean
Density (animals L ⁻¹)	40.3	44.7	43.0	28.2	38.6
% Cladocera	3.8	4.9	6.8	11.9	7.9
% Calanoida	24.8	30.0	19.0	32.1	27.0
% Cyclopoida	10.5	21.5	39.3	15.0	25.3
% Nauplii	60.9	43.6	34.9	41.0	39.8
Biomass (mg m ⁻³)	36.0	47.6	49.1	44.8	47.2
% Cladocera	26.1	25.9	32.0	59.2	39.0
% Calanoida	44.3	35.0	18.8	20.4	24.7
% Cyclopoida	22.2	34.6	45.8	17.6	32.7
% Nauplii	7.5	4.5	3.4	2.8	3.6
Number of collections	10	26	24	23	
Number of species collection ⁻¹	9.5	7.7	10.1	9.5	

TABLE 9

Summary of crustacean zooplankton group density and biomass in Dickie Lake

	1976	1977	1978	1979	1977-79 mean
Density (animals L ⁻¹)	32.2	40.1	21.5	45.8	35.8
% Cladocera	16.1	22.2	11.6	8.8	14.2
% Calanoida	54.3	43.5	19.0	27.2	29.9
% Cyclopoida	10.1	9.0	19.4	27.5	18.6
% Nauplii	19.5	25.3	49.8	36.5	37.2
Biomass (mg m ⁻³)	44.3	88.4	28.3	43.9	53.5
% Cladocera	38.8	63.5	53.6	30.8	49.3
% Calanoida	46.8	27.1	18.4	30.3	25.3
% Cyclopoida	12.9	8.1	23.6	34.7	22.1
% Nauplii	1.6	1.3	4.4	4.2	3.3
Number of collections	5	25	27	22	
Number of species collection ⁻¹	8.4	8.5	10.0	8.8	

TABLE 10

Summary of crustacean zooplankton group density and biomass in Harp Lake

	1976	1977	1978	1979	1977-79 mean
Density (animals L ⁻¹)	17.7	19.9	25.4	34.1	26.5
% Cladocera	23.9	20.4	22.9	19.7	21.0
% Calanoida	35.1	36.4	32.0	45.0	37.8
% Cyclopoida	28.2	19.2	25.6	16.4	20.4
% Nauplii	12.8	24.0	19.5	18.9	20.8
Biomass (mg m ⁻³)	26.5	33.9	39.5	47.1	40.2
% Cladocera	46.7	55.4	46.1	46.1	49.2
% Calanoida	25.6	25.5	28.6	34.2	29.4
% Cyclopoida	26.8	17.5	23.9	18.2	19.9
% Nauplii	0.9	1.6	1.4	1.5	1.5
Number of collections	6	27	21	21	
Number of species collection ⁻¹	11.8	8.4	12.2	12.3	

TABLE 11

Summary of crustacean zooplankton group density and biomass in Jerry Lake

	1976	1977	1978	1979	1977-79 mean
Density (animals L ⁻¹)	12.7	24.2	34.6	38.6	32.5
% Cladocera	6.8	5.1	10.2	27.5	14.3
% Calanoida	61.8	39.2	34.5	14.5	29.4
% Cyclopoida	25.9	21.3	27.0	46.4	31.5
% Nauplii	5.6	34.4	28.3	11.6	24.8
Biomass (mg m ⁻³)	19.4	27.3	43.2	73.7	48.1
% Cladocera	21.0	24.0	28.5	52.2	34.9
% Calanoida	53.6	41.5	34.6	9.2	28.4
% Cyclopoida	25.0	31.2	34.4	37.9	34.5
% Nauplii	0.4	3.3	2.5	0.7	2.2
Number of collections	7	26	23	16	
Number of species collection ⁻¹	8.7	6.0	8.7	9.9	

TABLE 12

Summary of crustacean zooplankton group density and biomass in Red Chalk Lake (main)

	1976	1977	1978	1979	1977-79 mean
Density (animals L ⁻¹)	23.2	28.7	31.6	31.2	30.5
% Cladocera	7.8	7.1	9.4	11.0	9.2
% Calanoida	24.7	20.1	10.9	11.8	14.3
% Cyclopoida	11.1	15.4	21.5	28.0	21.6
% Nauplii	56.4	57.4	58.2	49.2	54.9
Biomass (mg m ⁻³)	22.1	30.6	37.1	43.7	37.1
% Cladocera	45.9	40.8	48.8	46.7	45.4
% Calanoida	29.1	23.8	10.4	8.4	14.2
% Cyclopoida	18.5	29.5	35.4	41.0	35.3
% Nauplii	6.5	5.9	5.4	3.9	5.1
Number of collections	6	25	24	20	
Number of species collection ⁻¹	10.5	10.7	14.3	14.4	

TABLE 13

Summary of crustacean zooplankton group density and biomass in Red Chalk Lake (east)

	1977	1978	1979	1977-79 mean
Density (animals L ⁻¹)	32.4	37.2	30.0	33.2
% Cladocera	9.2	21.6	21.6	17.5
% Calanoida	24.6	11.9	15.3	17.3
% Cyclopoida	14.2	24.6	18.3	19.0
% Nauplii	52.0	41.9	44.8	46.2
Biomass (mg m ⁻³)	37.3	75.6	61.8	58.2
% Cladocera	46.9	65.5	62.6	58.3
% Calanoida	22.8	7.6	9.6	13.3
% Cyclopoida	25.3	24.6	25.4	25.1
% Nauplii	5.0	2.3	2.4	3.2
Number of collections	23	22	22	
Number of species collection ⁻¹	10.5	13.1	13.2	

TABLE 14

Summary of crustacean zooplankton group density and biomass in Basshaunt Lake

	1978	1979	1977-79 mean
Density (animals L ⁻¹)	47.2	36.1	41.7
% Cladocera	7.6	15.4	11.5
% Calanoida	7.1	8.7	7.9
% Cyclopoida	22.4	18.0	20.2
% Nauplii	62.9	57.9	60.4
Biomass (mg m ⁻³)	46.9	60.0	54.5
% Cladocera	42.0	67.0	54.5
% Calanoida	9.2	8.7	9.0
% Cyclopoida	41.8	20.5	31.2
% Nauplii	7.0	3.8	5.4
Number of collections	7	5	
Number of species collection ⁻¹	10.6	10.4	

TABLE 15

Summary of crustacean zooplankton group density and biomass in Bigwind Lake

	1976	1977	1978	1979	1977-79 mean
Density (animals L ⁻¹)	23.6	38.6	40.2	31.2	36.7
% Cladocera	13.4	6.3	18.4	23.9	16.2
% Calanoida	42.6	47.1	33.7	37.3	39.4
% Cyclopoida	21.5	7.7	8.6	10.2	8.8
% Nauplii	22.6	39.0	39.3	28.6	35.6
Biomass (mg m ⁻³)	51.9	41.1	50.9	55.0	49.0
% Cladocera	52.6	32.1	48.0	59.4	46.5
% Calanoida	31.6	50.9	32.4	23.2	35.5
% Cyclopoida	14.7	13.0	16.2	15.6	14.9
% Nauplii	1.1	4.0	3.4	1.8	3.1
Number of collections	2	4	6	5	
Number of species collection ⁻¹	11.5	11.0	14.2	13.0	

TABLE 16

Summary of crustacean zooplankton group density and biomass in Buck Lake

	1976	1977	1978	1979	1977-79 mean
Density (animals L ⁻¹)	81.3	11.0	22.9	33.4	22.4
% Cladocera	8.6	9.0	12.3	9.5	10.3
% Calanoida	6.5	31.1	4.0	7.2	14.1
% Cyclopoida	49.8	21.3	15.6	5.9	14.3
% Nauplii	35.1	38.6	68.1	77.4	61.3
Biomass (mg m ⁻³)	127.	20.7	34.0	42.7	32.5
% Cladocera	45.6	48.1	68.0	70.9	62.3
% Calanoida	6.5	20.7	4.6	8.9	11.4
% Cyclopoida	45.5	29.0	22.4	13.5	21.6
% Nauplii	2.4	2.3	5.0	6.7	4.7
Number of collections	2	4	7	4	
Number of species collection ⁻¹	10.0	8.0	9.9	9.3	

TABLE 17

Summary of crustacean zooplankton group density and biomass in Crosson Lake

	1976	1977	1978	1979	1977-79 mean
Density (animals L ⁻¹)	45.5	64.0	47.0	44.0	51.7
% Cladocera	5.1	4.5	14.1	13.1	10.6
% Calanoida	24.0	28.5	31.7	34.0	31.4
% Cyclopoida	13.9	30.9	12.0	19.5	20.8
% Nauplii	57.0	36.1	42.2	33.4	37.2
Biomass (mg m ⁻³)	37.6	70.3	74.2	76.2	73.6
% Cladocera	21.8	19.5	53.3	58.0	43.6
% Calanoida	41.7	28.8	28.6	19.6	25.7
% Cyclopoida	29.0	48.1	15.2	20.2	27.8
% Nauplii	7.6	3.6	2.9	2.2	2.9
Number of collections	2	5	6	5	
Number of species collection ⁻¹	13.0	10.8	10.5	10.8	

TABLE 18

Summary of crustacean zooplankton group density and biomass in Glen Lake

	1978	1979	1977-79 mean
Density (animals L ⁻¹)	219.	268.	244.
% Cladocera	5.0	3.4	4.2
% Calanoida	0.9	0.6	0.7
% Cyclopoida	4.6	1.0	2.8
% Nauplii	89.5	95.0	92.3
Biomass (mg m ⁻³)	109.	99.7	104.
% Cladocera	56.1	57.1	56.6
% Calanoida	6.7	6.9	6.8
% Cyclopoida	17.4	8.0	12.7
% Nauplii	19.8	28.0	23.9
Number of collections	6	4	
Number of species collection ⁻¹	9.2	8.3	

TABLE 19

Summary of crustacean zooplankton group density and biomass in Gullfeather Lake

	1976	1977	1978	1979	1977-79 mean
Density (animals L ⁻¹)	39.2	10.3	51.5	37.2	33.0
% Cladocera	40.4	35.2	38.5	33.0	35.6
% Calanoida	0.5	3.1	3.3	5.5	4.0
% Cyclopoida	54.4	47.1	42.1	47.6	45.6
% Nauplii	4.8	14.6	16.1	13.9	14.8
Biomass (mg m ⁻³)	166.	36.6	125.	124.	95.2
% Cladocera	86.2	80.6	71.2	77.4	76.4
% Calanoida	0.1	0.9	2.8	2.7	2.1
% Cyclopoida	13.6	18.0	25.3	19.4	20.9
% Nauplii	0.1	0.5	0.7	0.5	0.6
Number of collections	2	3	7	5	
Number of species collection ⁻¹	7.5	6.3	10.1	9.2	

TABLE 20

Summary of crustacean zooplankton group density and biomass in Little Clear Lake

	1976	1977	1978	1979	1977-79 mean
Density (animals L ⁻¹)	32.3	31.1	50.5	25.5	35.7
% Cladocera	23.8	18.5	15.3	27.9	20.6
% Calanoida	4.0	3.4	2.1	1.9	2.5
% Cyclopoida	36.8	22.8	22.8	15.6	20.4
% Nauplii	35.4	55.4	59.9	54.6	56.5
Biomass (mg m ⁻³)	67.7	65.6	83.8	63.4	70.9
% Cladocera	70.3	70.6	62.4	84.9	72.6
% Calanoida	4.3	3.9	1.6	0.9	2.1
% Cyclopoida	23.6	22.6	32.0	11.8	22.1
% Nauplii	1.8	2.9	4.0	2.4	3.2
Number of collections	1	4	9	4	
Number of species collection ⁻¹	12.0	11.8	9.8	9.5	

TABLE 21

Summary of crustacean zooplankton group density and biomass in Solitaire Lake

	1977	1978	1979	1977-79 mean
Density (animals L ⁻¹)	19.9	44.2	44.0	36.0
% Cladocera	13.3	8.6	21.9	14.6
% Calanoida	20.6	18.6	27.4	22.2
% Cyclopoida	34.6	16.0	19.6	23.4
% Nauplii	31.5	56.8	31.1	39.8
Biomass (mg m ⁻³)	36.0	47.2	67.7	50.3
% Cladocera	53.3	44.5	57.8	51.9
% Calanoida	13.4	20.5	17.2	17.0
% Cyclopoida	31.4	29.2	22.8	27.8
% Nauplii	1.9	5.8	2.2	3.3
Number of collections	4	7	4	
Number of species collection ⁻¹	10.8	11.3	12.8	

TABLE 22

Summary of crustacean zooplankton group density and biomass in Walker Lake

	1976	1977	1978	1979	1977-79 mean
Density (animals L ⁻¹)	27.2	17.2	41.0	55.7	38.0
% Cladocera	18.0	7.7	12.8	10.2	10.2
% Calanoida	25.3	31.1	16.7	23.3	23.7
% Cyclopoida	13.3	9.2	22.7	14.0	15.3
% Nauplii	36.8	52.0	47.8	52.6	50.8
Biomass (mg m ⁻³)	40.2	20.3	60.4	64.8	48.5
% Cladocera	49.5	38.6	67.7	52.7	53.0
% Calanoida	25.7	40.1	13.5	22.5	25.4
% Cyclopoida	21.8	16.5	15.2	19.8	17.2
% Nauplii	3.0	4.8	3.6	5.0	4.4
Number of collections	1	4	7	4	
Number of species collection ⁻¹	14.0	8.0	8.7	11.0	

TABLE 23

Summary of rotifer and crustacean contribution to ice-free period mean total zooplankton density in the "A-lakes" in 1977. Calculations were based on the period when both crustaceans and rotifers were sampled.

	Blue Chalk	Chub	Dickie	Harp	Jerry	Red Chalk (main)	Red Chalk (east)
Number of collections	15	20	21	20	18	18	23
Mean density (animals L ⁻¹)	69.1	75.8	106.	42.1	44.2	46.8	61.2
% Cladocera	2.6	3.0	8.4	10.7	3.6	5.0	4.8
% Calanoida	30.5	20.2	17.0	19.6	25.1	14.8	12.9
% Cyclopoida	5.5	13.2	3.6	9.3	13.9	11.4	8.2
% Nauplii	36.4	32.0	10.2	14.6	24.9	42.9	27.6
% Rotifera	25.1	31.6	60.8	45.7	32.5	25.9	46.5

TABLE 24

Summary of rotifer and crustacean contribution to ice-free period mean total zooplankton biomass in the "A-lakes" in 1977. Calculations were based on the period when both crustaceans and rotifers were sampled.

	Blue Chalk	Chub	Dickie	Harp	Jerry	Red Chalk (main)	Red Chalk (east)
Number of collections	15	20	21	20	18	18	23
Mean biomass (mg m ⁻³)	45.3	51.5	92.0	40.4	32.7	35.3	38.1
% Cladocera	21.3	25.1	63.1	58.3	25.9	39.0	45.1
% Calanoida	53.6	33.6	26.2	23.8	38.0	24.1	22.6
% Cyclopoida	18.4	35.2	8.1	15.4	31.4	30.1	26.4
% Nauplii	6.1	5.2	1.3	1.7	3.7	6.2	4.9
% Rotifera	0.6	0.8	1.3	0.8	1.0	0.5	1.1

TABLE 25

Crustacean zooplankton community composition (expressed as % density) in the "A-lakes". Values are a mean of 3 ice-free periods (1977-1979).

	Blue Chalk	Chub	Dickie	Harp	Jerry	Red Chalk (main)	Red Chalk (east)
Mean density (animals L ⁻¹)	54.7	38.6	35.8	26.5	32.5	30.5	33.2
CLADOCERA							
<i>Acroperus harpae</i>				<0.1			
<i>Alona</i> sp.			<0.1	<0.1	<0.1		<0.1
<i>Bosmina longirostris</i>	0.2	0.8	2.2	10.2	6.2	0.2	3.5
<i>Ceriodaphnia lacustris</i>				<0.1		<0.1	<0.1
<i>Ceridaphnia puichella</i>			<0.1	<0.1			<0.1
<i>Chydorus bicornutus</i>				<0.1			
<i>Chydorus sphaericus</i>	<0.1	<0.1	<0.1	0.4	<0.1		<0.1
<i>Daphnia ambigua</i>	<0.1	<0.1	0.3	<0.1		<0.1	
<i>Daphnia catawba</i>	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	2.5
<i>Daphnia dubia</i>	1.3	<0.1	<0.1	<0.1	<0.1	0.8	2.2
<i>Daphnia galeata mendotae</i>	2.5	<0.1	0.2	0.6	4.5	3.1	2.1
<i>Daphnia longiremis</i>	<0.1	0.3	<0.1	<0.1	<0.1	0.5	<0.1
<i>Daphnia pulex</i>	0.4	<0.1	<0.1	<0.1	<0.1	0.3	0.3
<i>Daphnia retrocurva</i>	<0.1	1.1	2.8	0.1	<0.1	<0.1	<0.1
<i>Diaphanosoma</i> sp.	0.7	1.6	1.9	3.4	3.0	1.7	0.8
<i>Eubosmina coregoni</i>				<0.1		<0.1	
<i>Eubosmina longispina</i>	1.5					1.0	0.1
<i>Eubosmina tubicen</i>	<0.1	<0.1	0.9	0.7	<0.1	0.2	0.4
<i>Holopedium gibberum</i>	0.2	4.0	5.6	5.3	0.4	0.7	5.5
<i>Ilyocryptus spinifer</i>				<0.1			
<i>Leptodora kindtii</i>	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<i>Polyphemus hamulatus</i>							<0.1
<i>Polyphemus pediculus</i>			<0.1	<0.1	<0.1	<0.1	<0.1
<i>Sida crystallina</i>	<0.1		<0.1	<0.1	<0.1	0.5	<0.1
CALANOIDA							
<i>Calanoid copepodid</i>	29.1	22.6	21.8	34.1	24.5	11.8	14.9
<i>Diaptomus minutus</i>	5.0	4.5	8.1	3.3	4.7	2.0	1.0
<i>Diaptomus oregonensis</i>	0.6	<0.1	<0.1	<0.1	<0.1	0.4	1.4
<i>Diaptomus sicilis</i>				<0.1			
<i>Epischura lacustris</i>	0.1	<0.1	<0.1	0.2	0.1	<0.1	<0.1
<i>Senecella calanoides</i>				0.2	0.1		<0.1
CYCLOPOIDA							
<i>Cyclopoid copepodid</i>	9.8	20.0	11.4	16.9	30.2	18.3	13.6
<i>Cyclops bicuspidatus thomasi</i>	0.5	<0.1	<0.1	0.9	0.7	1.3	0.4
<i>Cyclops scutifer</i>	0.7	0.6	0.6	<0.1	<0.1	1.6	2.6
<i>Cyclops vernalis</i>	<0.1	<0.1	0.1	<0.1	0.1		0.1
<i>Eucyclops agilis</i>				<0.1			
<i>Eucyclops speratus</i>	<0.1	<0.1					<0.1
<i>Mesocyclops edax</i>	0.4	0.5	0.5	0.2	0.3	0.2	0.7
<i>Orthocyclops modestus</i>				<0.1	<0.1		<0.1
<i>Paracyclops fimbriatus poppei</i>	<0.1						<0.1
<i>Tropocyclops prasinus mexicanus</i>	0.1	4.1	6.1	2.4	0.3	0.2	1.7
NAUPLII							
Nauplii	46.5	39.8	37.2	20.8	24.8	54.9	46.2

TABLE 26

Crustacean zooplankton community composition (expressed as % biomass) in the "A-lakes". Values are a mean of 3 ice-free periods (1977-1979).

	Blue Chalk	Chub	Dickie	Harp	Jerry	Red Chalk (main)	Red Chalk (east)
Mean biomass (mg m ⁻³)	56.9	47.2	53.5	40.2	48.1	37.1	58.2
CLADOCERA							
<i>Acroperus harpae</i>			*				
<i>Alona</i> sp.			0.1	<0.1			<0.1
<i>Bosmina longirostris</i>	0.1	0.3	1.0	3.7	2.0	0.1	1.2
<i>Ceriodaphnia lacustris</i>				*		*	*
<i>Ceridaphnia pulchella</i>		*	*				*
<i>Chydorus bicornutus</i>			*				
<i>Chydorus sphaericus</i>	<0.1	<0.1	<0.1	0.2	<0.1		<0.1
<i>Daphnia ambigua</i>	<0.1	0.2	0.8	<0.1		<0.1	
<i>Daphnia catawba</i>	0.1	<0.1	<0.1	<0.1	<0.1	0.1	5.0
<i>Daphnia dubia</i>	5.3	<0.1	0.1	<0.1	<0.1	3.1	5.1
<i>Daphnia galeata mendotae</i>	20.5	0.3	1.0	3.4	25.1	22.5	10.3
<i>Daphnia longiremis</i>	0.1	1.3	0.1	<0.1	<0.1	1.9	0.1
<i>Daphnia pulex</i>	2.8	<0.1	<0.1	<0.1	<0.1	2.3	1.1
<i>Daphnia retrocurva</i>	<0.1	2.8	4.4	0.2	<0.1	<0.1	<0.1
<i>Diaphanosoma</i> sp.	1.3	2.2	3.0	4.1	4.0	2.6	0.7
<i>Eubosmina coregoni</i>				<0.1		<0.1	
<i>Eubosmina longispina</i>	0.8					0.4	<0.1
<i>Eubosmina tubicen</i>	<0.1	<0.1	0.2	0.2	<0.1	<0.1	<0.1
<i>Holopedium gibberum</i>	1.7	31.7	37.2	36.8	3.4	6.3	34.2
<i>Ilyocryptus spinifer</i>			*				
<i>Leptodora kindtii</i>	0.3	<0.1	0.9	0.2	<0.1	0.2	<0.1
<i>Polyphemus hamuiatus</i>							*
<i>Polyphemus pediculus</i>		<0.1	<0.1	<0.1	0.1	0.7	0.1
<i>Sida crystallina</i>				0.1	0.1	0.2	0.1
CALANOIDA							
<i>Calanoid copepodid</i>	24.8	15.5	13.9	19.6	16.8	8.7	8.7
<i>Diaptomus minutus</i>	10.8	8.5	11.0	4.6	8.7	4.1	1.5
<i>Diaptomus oregonensis</i>	2.0	0.1	<0.1	<0.1	<0.1	1.2	2.7
<i>Diaptomus sicilis</i>				0.5			
<i>Epischura lacustris</i>	2.0	0.6	0.4	1.9	1.3	0.2	0.4
<i>Senecella calanoides</i>					2.8	1.6	0.1
CYCLOPOPODA							
<i>Cyclopoid copepodid</i>	13.5	25.4	13.7	16.4	30.9	22.3	12.0
<i>Cyclops bicuspidatus thomasi</i>	1.6	<0.1	<0.1	1.9	1.9	3.7	0.8
<i>Cyclops scutifer</i>	4.4	3.1	3.0	<0.1	<0.1	8.2	9.2
<i>Cyclops vernalis</i>	<0.1	<0.1	0.3	<0.1	0.2		0.1
<i>Eucyclops agilis</i>				<0.1			
<i>Eucyclops speratus</i>	<0.1						<0.1
<i>Mesocyclops edax</i>	2.8	2.4	2.3	0.8	1.4	1.1	2.6
<i>Orthocyclops modestus</i>				<0.1	<0.1		<0.1
<i>Paracyclops fimbriatus poppel</i>	*						*
<i>Tropocyclops prasinus mexicanus</i>	<0.1	1.6	2.7	0.7	<0.1	<0.1	0.5
NAUPLII							
<i>Nauplii</i>	4.9	3.6	3.2	1.5	2.2	5.1	3.2

* species dry weight not available

TABLE 27

Crustacean zooplankton community composition (expressed as % density) in the "B-lakes". Values are ice-free season means of 2 (1978-1979) or 3 (1977-1979) years of data, depending on sampling intensity.

	Bass-haunt	Big-wind	Buck	Crosson	Glen	Gull-feather	Little Clear	Soil-taire	Walker
Years of data	2	3	3	3	2	3	3	3	3
Mean density (animals L ⁻¹)	41.7	36.7	22.4	51.7	244.	33.0	35.7	36.0	38.0
CLADOCERA									
Alona sp.						<0.1			<0.1
Bosmina longirostris	1.8	1.9	0.2	0.6	0.1	6.8	2.2	5.0	0.8
Ceriodaphnia lacustris							<0.1		
Chydorus sphaericus	<0.1	2.2		<0.1		<0.1	<0.1		<0.1
Daphnia ambigua			0.1	0.3		1.7		<0.1	<0.1
Daphnia catawba	1.8		1.2	<0.1	<0.1		0.1	<0.1	0.1
Daphnia dubia		0.3	<0.1			<0.1	0.7	2.1	0.1
Daphnia galeata mendotae	1.4	2.9	0.3	2.0	1.3	0.5	6.1	2.9	4.1
Daphnia longiremis	<0.1	1.0	<0.1	1.8		<0.1	1.6	1.3	
Daphnia pulex	5.0	<0.1	2.1		1.3	<0.1	1.3	0.5	1.5
Daphnia retrocurva			2.4			5.0			
Diaphanosoma sp.	<0.1	4.0	<0.1	2.5	1.6	3.0	1.6	0.1	2.2
Eubosmina coregoni									<0.1
Eubosmina tubicen	<0.1	0.1	<0.1	<0.1			<0.1		<0.1
Holopedium gibberum	1.4	0.7	6.3	3.2	<0.1	18.5	6.8	2.2	1.5
Leptodora kindtii	<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.1
Polyphemus pediculus	<0.1	<0.1						<0.1	<0.1
Scapholeberis kingi							<0.1		
Sida crystallina	<0.1	0.6					<0.1	0.3	
CALANOIDA									
Calanoid copepodid	6.4	33.0	9.6	26.0	0.4	2.6	1.7	19.7	16.5
Diaptomus minutus	0.7	5.3	4.4	4.5	<0.1	0.5	0.7	2.5	7.1
Diaptomus oregonensis	0.7	1.0		0.9	0.4	0.8		0.1	
Diaptomus sicilis				<0.1					
Epischura lacustris	0.2	<0.1	<0.1	0.1	<0.1		0.1	0.1	<0.1
CYCLOPOIDA									
Cyclopoid copepodid	18.2	5.5	9.8	18.4	2.3	33.1	14.4	21.2	7.5
Cyclops bicuspidatus thomasi	<0.1	1.7	0.2	0.8	<0.1	1.0	0.4	1.0	0.2
Cyclops scutifer	1.2	0.1	2.4	0.4	0.3	<0.1	2.3	0.6	0.5
Cyclops vernalis	<0.1	<0.1		<0.1	<0.1	<0.1			<0.1
Eucyclops speratus							<0.1		
Mesocyclops edax	0.4	0.8	0.5	0.7	<0.1	0.7	0.7	0.2	0.5
Orthocyclops modestus					<0.1				<0.1
Tropocyclops prasinus mexicanus	0.4	0.6	1.2	0.6	<0.1	10.6	2.6	0.2	6.6
NAUPLII									
Nauplii	60.4	35.6	61.4	37.2	92.3	14.8	56.6	39.7	50.8

TABLE 28

Crustacean zooplankton community composition (expressed as % biomass) in the "B-lakes". Values are ice-free season means of 2 (1978-1979) or 3 (1977-1979) years of data, depending on sampling intensity.

	Bass-haunt	Big-wind	Buck	Crosson	Glen	Gull-feather	Little Clear	Soll-talre	Walker
Years of data	2	3	3	3	2	3	3	3	3
Mean biomass (mg m ⁻³)	54.5	49.0	32.5	73.6	104.	95.2	70.9	50.3	48.5
CLADOCERA									
<i>Alona</i> sp.						<0.1			<0.1
<i>Bosmina longirostris</i>	0.8	0.8	<0.1	0.2	0.1	1.3	0.6	1.8	0.3
<i>Ceriodaphnia lacustris</i>						*			
<i>Chydorus sphaericus</i>	<0.1	1.2		<0.1		<0.1	<0.1		<0.1
<i>Daphnia ambigua</i>			0.1	0.7		1.6		<0.1	<0.1
<i>Daphnia catawba</i>	6.6		3.3	<0.1	0.1		0.1	<0.1	0.3
<i>Daphnia dubia</i>		0.8	<0.1			<0.1	1.6	6.7	0.4
<i>Daphnia galeata mendotae</i>	7.6	16.8	2.0	11.6	24.9	1.5	26.2	16.5	26.4
<i>Daphnia longiremis</i>	<0.1	3.6	<0.1	5.8		0.1	4.4	5.0	
<i>Daphnia pulex</i>	28.4	<0.1	12.2		24.8	<0.1	5.3	3.3	9.6
<i>Daphnia retrocurva</i>			5.4			5.4			
<i>Diaphanosoma</i> sp.	<0.1	5.3	<0.1	3.1	6.7	2.2	1.4	0.2	3.3
<i>Eubosmina coregoni</i>									<0.1
<i>Eubosmina tubicen</i>	<0.1	<0.1	<0.1	<0.1			<0.1		<0.1
<i>Hoipodium gibberum</i>	10.9	7.2	44.5	21.9	<0.1	64.0	32.8	14.7	12.5
<i>Leptodora kindtii</i>	<0.1	0.1		0.2		0.3	0.1	0.1	<0.1
<i>Polyphemus pediculus</i>	0.2	0.1						0.4	<0.1
<i>Scapholeberis kinki</i>							0.1		
<i>Sida crystallina</i>	<0.1	5.2					0.1	3.0	
CALANOIDA									
<i>Caianoid copepodid</i>	4.3	22.2	4.8	15.7	0.7	0.7	0.7	11.9	11.6
<i>Diaptomus minutus</i>	1.4	9.7	6.1	6.9	<0.1	0.4	0.7	4.0	13.1
<i>Diaptomus oregonensis</i>	1.9	2.8		2.3	2.8	1.0		<0.1	
<i>Diaptomus sicilis</i>				<0.1					
<i>Epsichura lacustris</i>	1.5	0.8	0.5	0.7	3.2		0.7	1.1	0.7
CYCLOPOIDA									
<i>Cyclopoid copepodid</i>	22.7	6.4	9.1	21.0	7.3	15.9	10.7	21.1	8.9
<i>Cyclops bicuspidatus thomasi</i>	0.2	3.9	0.5	1.7	0.2	1.3	0.7	2.5	0.5
<i>Cyclops scutifer</i>	6.2	0.7	9.7	2.0	4.5	0.1	8.0	3.1	2.5
<i>Cyclops vernalis</i>	<0.1	0.1		<0.1	0.2	<0.1			<0.1
<i>Eucyclops speratus</i>							<0.1		
<i>Mesocyclops edax</i>	2.1	3.6	2.0	2.9	<0.1	1.9	2.1	1.2	2.9
<i>Orthocyclops modestus</i>					0.5				<0.1
<i>Tropocyclops prasinus mexicanus</i>	<0.1	0.2	0.4	0.2	<0.1	1.8	0.6	<0.1	2.3
NAUPLII									
Nauplii	5.4	3.1	4.7	2.9	24.0	0.6	3.1	3.3	4.5

* species dry weight not available

TABLE 29

Summary of crustacean zooplankton species occurrence, density and biomass in Blue Chalk Lake

	% occurrence				% density				% biomass							
					1976	1977	1978	1979	1976	1977	1978	1979	1976	1977	1978	1979
	Number of collections	6	23	20	21											
Mean density (animals L ⁻¹)						29.0	44.8	45.0	74.3							
Mean biomass (mg m ⁻³)										39.1	44.7	56.0	69.9			
CLADOCERA																
<i>Bosmina longirostris</i>	100	83	75	100		4.0	0.2	0.1	0.2	1.0	0.1	0.1	0.1			
<i>Chydorus sphaericus</i>	17		5			<0.1		<0.1		<0.1		<0.1				
<i>Daphnia ambigua</i>		5		5			<0.1		<0.1			<0.1				
<i>Daphnia catawba</i>			25	14				<0.1	<0.1			0.2	<0.1			
<i>Daphnia dubia</i>	100	78	85	90		4.4	0.4	2.4	1.2	14.5	1.6	8.6	5.6			
<i>Daphnia galeata mendotae</i>	100	96	100	100		1.0	2.1	3.2	2.2	6.3	18.3	22.3	20.9			
<i>Daphnia longiremis</i>			5				<0.1					0.3				
<i>Daphnia pulex</i>	67	96	70	52		<0.1	0.4	0.6	0.2	0.3	2.9	3.9	1.6			
<i>Daphnia retrocurva</i>			20				<0.1					0.1				
<i>Diaphanosoma</i> sp.	83	52	85	76		1.2	0.4	0.7	1.0	1.7	0.8	1.1	1.9			
<i>Eubosmina longispina</i>		100	95	100			1.0	2.7	0.9		0.6	1.1	0.6			
<i>Eubosmina tubicen</i>		9	20	24			<0.1	<0.1	<0.1		<0.1	<0.1	<0.1			
<i>Holopedium gibberum</i>	83	26	85	57		0.3	<0.1	0.4	<0.1	2.1	0.3	3.8	1.0			
<i>Leptodora kindtii</i>		5	45	57			<0.1	<0.1	<0.1		<0.1	0.2	0.8			
<i>Sida crystallina</i>		17					<0.1				0.2					
CALANOIDA																
<i>Calanoid</i> copepodid	100	100	100	100		26.0	30.6	21.4	35.4	16.7	26.7	15.0	32.7			
<i>Diaptomus minutus</i>	100	100	100	100		23.5	10.5	3.3	1.2	38.8	23.7	5.9	2.9			
<i>Diaptomus oregonensis</i>	67	78	85	86		0.5	0.4	1.3	0.2	1.2	1.5	3.8	0.6			
<i>Epischura lacustris</i>	83	43	85	52		0.1	<0.1	0.3	<0.1	1.7	1.1	3.4	1.6			
CYCLOPOIDA																
<i>Cyclopoid</i> copepodid	100	100	100	100		8.0	6.4	14.7	8.2	8.8	9.7	17.7	13.1			
<i>Cyclops bicuspidatus thomasi</i>	50	91	85	81		0.2	0.7	0.7	0.2	0.5	2.3	1.8	0.8			
<i>Cyclops scutifer</i>	17	35	65	71		<0.1	0.6	0.7	0.8	<0.1	3.7	3.8	5.8			
<i>Cyclops vernalis</i>				5				<0.1				<0.1				
<i>Eucyclops speratus</i>				5				<0.1				<0.1				
<i>Mesocyclops edax</i>	83	74	75	95		0.5	0.2	0.5	0.6	2.6	1.0	2.6	4.2			
<i>Paracyclops fimbriatus</i> poppei		5					<0.1				*					
<i>Tropocyclops prasinus</i> mexicanus	83	57	20	14		1.1	<0.1	<0.1	0.2	0.4	<0.1	<0.1	0.1			
NAUPLII																
Nauplii	100	100	100	100		29.2	45.8	46.6	47.2	2.4	5.1	4.1	5.5			

Number of species collection⁻¹ 10.5 10.0 12.3 11.8

* species dry weight not available

TABLE 30

Summary of crustacean zooplankton species occurrence, density and biomass in Chub Lake

	% occurrence				% density				% biomass			
	1976	1977	1978	1979	1976	1977	1978	1979	1976	1977	1978	1979
Number of collections	10	26	24	23								
Mean density (animals L ⁻¹)					40.3	44.7	43.0	28.2				
Mean biomass (mg m ⁻³)									36.0	47.6	49.1	44.8
CLADOCERA												
Alona sp.	10								<0.1			<0.1
Bosmina longirostris	50	65	83	87	0.8	0.2	1.6	0.5	0.5	<0.1	0.8	0.2
Ceriodaphnia pulchella	10	4	8		<0.1	<0.1	<0.1		*	*	*	
Chydorus sphaericus			8				<0.1				<0.1	
Daphnia ambigua	10	20	54	35	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	0.3	0.2
Daphnia catawba			17				<0.1				<0.1	
Daphnia dubia	50	4		9	<0.1	<0.1		<0.1	0.4	<0.1		<0.1
Daphnia galeata mendotae	20	4	46	30	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	0.4	0.4
Daphnia longiremis	90	65	83	96	0.5	0.1	0.4	0.5	2.8	0.5	1.7	1.7
Daphnia pulex			4				<0.1				<0.1	
Daphnia retrocurva	40	89	86	65	0.4	2.0	0.7	0.5	1.3	5.8	1.8	0.9
Daphnia rosea	20				<0.1					<0.1		
Diaphanosoma sp.	30	55	92	87	0.3	0.9	1.4	2.5	0.6	1.5	2.2	2.9
Eubosmina tubicen			8	4			<0.1	<0.1			<0.1	<0.1
Holopedium gibberum	100	77	100	100	1.6	1.7	2.6	7.7	19.5	17.7	24.7	52.7
Leptodora kindtii	50	4	17	17	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	<0.1	0.1
Polypphemus pediculus	20	4	4	4	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	<0.1	<0.1
CALANOIDA												
Calanoid copepodid	100	100	100	100	15.6	22.8	15.6	29.3	15.2	18.6	11.9	16.0
Diaptomus minutus	100	100	100	100	8.8	7.2	3.4	2.8	22.0	15.1	6.6	3.9
Diaptomus oregonensis	10		8		<0.1		<0.1		<0.1		0.2	
Epiischura lacustris	80	62	8	39	0.4	<0.1	<0.1	<0.1	7.1	1.4	<0.1	0.5
CYCLOPOIDA												
Cyclopoid copepodid	100	100	100	100	7.2	19.3	28.9	11.8	12.1	27.2	38.0	11.1
Cyclops blicuspidatus thomasi		18	29	9		<0.1	<0.1	<0.1		<0.1	<0.1	<0.1
Cyclops scutifer	40	58	46	70	0.1	0.8	0.3	0.8	1.0	4.6	1.7	3.1
Cyclops vernalis			21				<0.1				0.1	
Eucyclops speratus	50				<0.1					<0.1		
Mesocyclops edax	90	73	96	96	1.1	0.4	0.3	0.7	8.0	2.4	1.9	2.9
Tropocyclops prasinus	80	96	88	100	2.1	1.0	9.6	1.7	1.1	0.4	4.0	0.5
mexicanus												
NAUPLII												
Nauplii	100	100	100	100	60.9	43.6	34.9	41.0	7.5	4.5	3.4	2.8
Number of species collection ⁻¹	9.5	7.7	10.1	9.5								

* species dry weight not available

TABLE 31

Summary of crustacean zooplankton species occurrence, density and biomass in Dickie Lake

	% occurrence				% density				% biomass			
	1976 1977 1978 1979				1976 1977 1978 1979				1976 1977 1978 1979			
Number of collections	5	25	27	22								
Mean density (animals L ⁻¹)					32.2	40.1	21.5	45.8				
Mean biomass (mg m ⁻³)									44.3	88.4	28.3	43.9
CLADOCERA												
Acroperus harpae			15	5			<0.1	<0.1			*	*
Alona sp.	20	4	33	9	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	0.2	<0.1
Bosmina longirostris	80	72	100	100	0.5	0.3	3.5	2.7	0.2	<0.1	1.4	1.5
Ceriodaphnia puichellia			7				<0.1				*	
Chydorus bicornutus			7				<0.1				*	
Chydorus sphaericus		4	15	5	<0.1	<0.1	<0.1				<0.1	<0.1
Daphnia ambigua	28	37	54		<0.1	0.2	0.5				<0.1	0.5
Daphnia catawba			7				<0.1				<0.1	
Daphnia dubia		4	30	14	<0.1	<0.1	<0.1				<0.1	0.1
Daphnia galeata mendotae		4	48	32	0.3	0.2	<0.1				1.2	1.3
Daphnia longiremis		4	30	9	<0.1	0.1	<0.1				<0.1	0.4
Daphnia pulex			11				<0.1				<0.1	
Daphnia retrocurva	100	92	37	32	7.5	7.5	0.8	0.2	17.0	10.7	1.8	0.7
Diaphanosoma sp.	100	76	74	86	1.5	1.5	0.7	3.3	2.1	1.3	1.0	6.8
Eubosmina coregoni	20				0.1				0.2			
Eubosmina tubicen	80	92	33	18	4.2	2.3	0.5	<0.1	1.2	0.4	0.1	<0.1
Holopedium gibberum	100	96	56	50	2.3	9.9	5.5	1.4	18.0	49.3	45.9	17.3
Ilyocryptus spinifer			4				<0.1				*	
Leptodora kindtii		16	41	32	<0.1	<0.1	0.1		0.3	0.5	2.0	
Polyphemus pediculus		4	4		<0.1	<0.1			0.1	<0.1		
Sida crystallina			19				<0.1				0.2	
CALANOIDA												
Calanoid copepodid	100	100	100	100	41.9	27.8	13.6	22.9	26.5	11.0	9.0	21.6
Diaptomus minutus	100	100	100	100	12.4	15.7	5.4	3.3	20.2	16.0	9.2	7.7
Diaptomus oregonensis	20	4	15	23	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Epischura lacustris		12	11	36	<0.1	<0.1	<0.1		0.1	0.2	0.9	
CYCLOPOIDA												
Cyclopoid copepodid	100	100	100	100	8.3	7.0	14.1	17.3	9.1	4.8	16.1	20.3
Cyclops bicuspidatus thomasi		9	30	14		<0.1	<0.1	<0.1		<0.1	<0.1	<0.1
Cyclops scutifer	20	28	48	45	<0.1	0.3	0.6	0.7	0.3	0.9	3.0	5.2
Cyclops vernalis	20	36	19	32	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	0.1	0.7
Eucyclops agilis		8	7	14	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1
Mesocyclops edax	80	72	74	77	0.7	0.7	0.6	0.3	3.1	2.1	2.9	1.9
Orthocyclops modestus		4	7	9	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1
Tropocyclops prasinus mexicanus	100	72	74	82	1.1	1.0	4.1	13.2	0.4	0.2	1.5	6.5
NAUPLII												
Nauplii	100	100	100	100	19.5	25.3	49.8	34.5	1.6	1.3	4.2	4.2
Number of species collection ⁻¹	8.4	8.5	10.0	8.8								

* species dry weight not available

TABLE 32

Summary of crustacean zooplankton species occurrence, density and biomass in Harp Lake

	% occurrence				% density				% biomass			
	1976	1977	1978	1979	1976	1977	1978	1979	1976	1977	1978	1979
Number of collections	6	27	21	21								
Mean density (animals L ⁻¹)					17.7	19.9	25.4	34.1				
Mean biomass (mg m ⁻³)									26.5	33.9	39.5	47.1
CLADOCERA												
<i>Alona</i> sp.		4					<0.1				<0.1	
<i>Bosmina longirostris</i>	100	96	100	100	14.3	9.7	10.2	11.3	5.2	3.1	3.5	4.4
<i>Ceriodaphnia lacustris</i>	17	4			<0.1	<0.1			*	*		
<i>Chydorus sphaericus</i>	84	22	67	62	0.2	0.2	1.1	<0.1	0.1	0.1	0.6	<0.1
<i>Daphnia ambigua</i>				5			<0.1				<0.1	
<i>Daphnia catawba</i>			14			<0.1					<0.1	
<i>Daphnia dubia</i>				14			<0.1				<0.1	
<i>Daphnia galeata mendotae</i>	67	78	86	95	0.5	0.3	0.8	0.6	2.9	1.7	4.4	4.0
<i>Daphnia longiremis</i>			5			<0.1					<0.1	
<i>Daphnia pulex</i>			5	5		<0.1	<0.1				<0.1	<0.1
<i>Daphnia retrocurva</i>	33	11	57	29	<0.1	<0.1	0.3	<0.1	<0.1	<0.1	0.5	0.2
<i>Diaphanosoma</i> sp.	100	81	86	95	4.4	2.7	4.9	2.5	5.6	3.0	5.9	3.4
<i>Eubosmina coregoni</i>			4			<0.1					<0.1	
<i>Eubosmina tubicen</i>				38	90		1.4	0.8			0.4	0.2
<i>Holopedium gibberum</i>	100	96	95	100	4.3	7.4	4.3	4.2	31.6	47.3	30.1	33.1
<i>Leptodora kindtii</i>	50	7	24	38	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	<0.1	0.6
<i>Polyphemus pediculus</i>	50		5	5	<0.1		<0.1	<0.1	0.9		<0.1	<0.1
<i>Sida crystallina</i>	17		24	5	<0.1		<0.1	<0.1	<0.1		0.3	<0.1
CALANOIDA												
<i>Calanoid copepodid</i>	100	100	100	100	31.7	30.8	28.0	43.5	18.4	15.8	15.7	27.4
<i>Diaptomus minutus</i>	100	100	100	95	3.2	5.4	3.5	1.0	4.8	7.1	5.0	1.7
<i>Diaptomus oregonensis</i>		4	19	14		<0.1	<0.1	<0.1			<0.1	<0.1
<i>Diaptomus sicilis</i>	17	11	43	38	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.8	0.6
<i>Epischura lacustris</i>	83	48	86	76	0.2	0.2	0.2	0.2	2.4	2.1	1.7	1.9
<i>Senecilia calanoides</i>	17	11	71	67	<0.1	<0.1	0.3	0.3	<0.1	0.4	5.4	2.6
CYCLOPOIDA												
<i>Cyclopoid copepodid</i>	100	100	100	100	23.0	16.3	20.1	14.4	23.0	14.3	19.4	15.6
<i>Cyclops bicuspidatus thomasi</i>	100	96	100	95	0.7	1.0	1.2	0.6	1.6	1.8	2.4	1.5
<i>Cyclops scutifer</i>		4	14	10		<0.1	<0.1	<0.1			<0.1	<0.1
<i>Cyclops vernalis</i>	67	26	29	33	<0.1	<0.1	<0.1	<0.1	0.2	0.1	<0.1	0.1
<i>Mesocyclops edax</i>	83	37	67	67	0.1	0.2	0.2	0.1	0.7	0.8	0.9	0.6
<i>Orthocyclops modestus</i>			4			<0.1					<0.1	
<i>Tropocyclops prasinus mexicanus</i>	100	93	95	100	4.2	1.7	4.1	1.3	1.3	0.5	1.2	0.4
NAUPLII												
<i>Naupili</i>	100	100	100	100	12.9	24.0	19.5	18.9	0.9	1.6	1.4	1.5
Number of species collection ⁻¹	11.8	8.4	12.2	12.3								

* species dry weight not available

TABLE 33

Summary of crustacean zooplankton species occurrence, density and biomass in Jerry Lake

	% occurrence				% density				% biomass			
	1976	1977	1978	1979	1976	1977	1978	1979	1976	1977	1978	1979
Number of collections	7	26	23	16								
Mean density (animals L ⁻¹)					12.7	24.2	34.6	38.6				
Mean biomass (mg m ⁻³)									19.4	27.3	43.2	73.7
CLADOCERA												
<i>Bosmina longirostris</i>	86	65	91	100	1.5	0.8	4.1	13.7	0.5	0.4	1.8	3.9
<i>Chydorus sphaericus</i>			4				<0.1				<0.1	
<i>Daphnia catawba</i>			4				<0.1				<0.1	
<i>Daphnia dubia</i>		4	9	6		<0.1	<0.1	<0.1			<0.1	<0.1
<i>Daphnia galeata mendotae</i>	86	81	78	100	2.1	1.8	2.9	8.9	11.9	14.1	20.2	40.9
<i>Daphnia longiremis</i>			9	6			<0.1	<0.1			<0.1	<0.1
<i>Daphnia pulex</i>		4	4			<0.1	<0.1				<0.1	<0.1
<i>Daphnia retrocurva</i>			4	6			<0.1	<0.1			<0.1	<0.1
<i>Diaphanosoma</i> sp.	100	69	83	100	2.4	1.9	3.0	4.2	2.9	3.2	4.5	4.2
<i>Eubosmina coregoni</i>	14				<0.1					<0.1		
<i>Eubosmina tubicen</i>	14	4	9	13	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<i>Holopedium gibberum</i>	71	27	70	75	0.8	0.6	0.2	0.5	5.6	5.9	1.6	2.7
<i>Leptodora kindtii</i>		4	22	13		<0.1	<0.1	<0.1		<0.1	<0.1	0.1
<i>Polyphemus pediculus</i>		4	4	6		<0.1	<0.1	<0.1		0.2	0.1	<0.1
<i>Sida crystallina</i>			17	19			<0.1	<0.1			0.2	0.3
CALANOIDA												
<i>Calanoid copepodid</i>	100	100	100	100	55.7	31.8	28.5	13.1	31.6	24.5	19.9	6.0
<i>Diaptomus minutus</i>	86	88	96	94	4.6	7.3	5.8	1.1	6.7	14.4	10.4	1.3
<i>Diaptomus oregonensis</i>			4	9			<0.1	<0.1			0.1	<0.1
<i>Epischura lacustris</i>	100	42	57	56	1.5	0.1	<0.1	0.1	15.1	1.8	1.1	0.9
<i>Senecilla calanoides</i>	14	16	65	88	<0.1	<0.1	0.1	0.1	0.2	0.6	3.1	1.0
CYCLOPOIDA												
<i>Cyclopoid copepodid</i>	100	100	100	100	21.1	19.7	25.5	45.4	20.6	26.2	30.7	35.7
<i>Cyclops bicuspidatus thomasi</i>	86	54	48	63	1.0	1.2	0.8	<0.1	2.0	3.4	2.1	0.2
<i>Cyclops scutifer</i>		8	17	6		<0.1	<0.1	<0.1		<0.1	<0.1	<0.1
<i>Cyclops vernalis</i>	57	30	26	94	0.6	<0.1	<0.1	0.2	1.3	0.1	0.2	0.3
<i>Mesocyclops edax</i>	57	54	65	75	<0.1	0.2	0.2	0.5	0.1	1.3	1.2	1.7
<i>Tropocyclops prasinus mexicanus</i>	100	38	83	75	3.1	<0.1	0.4	0.2	1.0	<0.1	0.1	<0.1
NAUPLII												
Nauplii	100	100	100	100	5.6	34.4	28.3	11.6	0.4	3.3	2.5	0.7

TABLE 34

Summary of crustacean zooplankton species occurrence, density and biomass in Red Chalk Lake (main)

	% occurrence				% density				% biomass				
	1976	1977	1978	1979	1976	1977	1978	1979	1976	1977	1978	1979	
Number of collections	6	25	24	20									
Mean density (animals L ⁻¹)					23.2	28.7	31.6	31.2					
Mean biomass (mg m ⁻³)									22.1	30.6	37.1	43.7	
CLADOCERA													
<i>Bosmina longirostris</i>	67	60	96	80	0.5	0.2	0.2	0.2	0.3	0.1	0.1	0.1	
<i>Ceriodaphnia lacustris</i>				5				<0.1				*	
<i>Daphnia ambigua</i>		4					<0.1				<0.1		
<i>Daphnia catawba</i>			46	20			<0.1	<0.1			0.2	0.2	
<i>Daphnia dubia</i>	100	60	88	98	1.9	0.6	1.1	0.7	9.0	2.5	4.4	2.3	
<i>Daphnia galeata mendotae</i>	100	100	100	100	2.4	2.3	3.8	3.2	22.0	19.0	28.5	20.1	
<i>Daphnia longiremis</i>	33	68	83	100	0.2	0.1	0.4	1.0	0.9	0.6	1.6	3.6	
<i>Daphnia pulex</i>	83	48	96	90	0.3	0.1	0.3	0.6	2.3	1.0	2.2	3.6	
<i>Daphnia retrocurva</i>			21				<0.1				<0.1		
<i>Diaphanosoma</i> sp.	83	64	83	95	2.0	1.5	1.3	2.3	3.9	2.6	2.1	3.1	
<i>Eubosmina coregoni</i>			4				<0.1				<0.1		
<i>Eubosmina longispina</i>		92	100	100			1.0	1.0	1.1		0.5	0.4	0.4
<i>Eubosmina tubicen</i>		24	33	60			<0.1	0.3	0.2		<0.1	0.1	<0.1
<i>Holopedium gibberum</i>	50	76	92	100	0.1	0.5	0.6	1.1	1.3	4.7	5.8	8.4	
<i>Leptodora kindtii</i>			38	35			<0.1	<0.1			0.2	0.4	
<i>Polyphemus pediculus</i>	17	12	13	20	<0.1	<0.1	<0.1	<0.1	0.3	0.6	0.3	1.1	
<i>Sida crystallina</i>	100	68	83	85	0.5	0.8	0.3	0.4	5.9	9.3	2.7	3.4	
CALANOIDA													
<i>Calanoid copepodid</i>	100	100	100	100	22.3	15.0	9.4	11.1	20.4	12.2	7.0	6.9	
<i>Diaptomus minutus</i>	100	88	92	100	1.8	4.5	1.1	0.4	4.2	9.4	2.1	0.7	
<i>Diaptomus oregonensis</i>	100	96	88	90	0.5	0.6	0.4	0.3	1.9	1.9	1.1	0.7	
<i>Epischura lacustris</i>	33	9	17	25	0.2	<0.1	<0.1	<0.1	2.6	0.2	0.3	0.1	
CYCLOPOIDA													
<i>Cyclopoid copepodid</i>	100	100	100	100	10.5	12.8	18.0	24.2	16.6	18.1	23.0	25.9	
<i>Cyclops bicuspidatus thomasi</i>	83	92	100	90	0.4	1.1	1.9	1.0	1.2	3.5	5.3	2.2	
<i>Cyclops scutifer</i>	33	60	88	95	<0.1	1.1	1.1	2.6	0.5	6.7	6.0	11.9	
<i>Mesocyclops edax</i>			48	83	85		0.2	0.2	0.2		1.2	1.0	1.0
<i>Tropocyclops prasinus mexicanus</i>	67	68	83	45	0.2	0.2	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	
NAUPLII													
Nauplii	100	100	100	100	56.4	57.4	58.2	49.2	6.5	5.9	5.4	3.9	
Number of species collection ⁻¹	10.5	11.3	15.3	15.3									

* species dry weight not available

TABLE 35

Summary of crustacean zooplankton species occurrence, density and biomass in Red Chalk Lake (east)

	% occurrence			% density			% biomass		
	1977	1978	1979	1977	1978	1979	1977	1978	1979
Number of collections	23	22	22						
Mean density (animals L ⁻¹)				32.4	37.2	30.0			
Mean biomass (mg m ⁻³)							37.3	75.6	61.8
CLADOCERA									
Alona sp.		5							
Bosmina longirostris	96	91	95	3.4	2.3	4.9	1.7	0.6	1.3
Ceriodaphnia lacustris			9			<0.1			*
Ceriodaphnia pulchella	5	5		<0.1	<0.1		*	*	
Chydorus sphaericus		5			<0.1				<0.1
Daphnia catawba	39	100	82	0.1	5.6	1.9	0.4	11.1	3.6
Daphnia dubia	70	95	95	0.5	3.6	2.5	1.8	8.0	5.5
Daphnia galeata mendotae	70	95	100	1.3	2.0	2.9	9.8	8.7	12.4
Daphnia longiremis	13	32	23	<0.1	<0.1	<0.1	0.1	0.1	0.1
Daphnia pulex	13	41	64	<0.1	0.1	0.7	0.1	0.5	2.7
Daphnia retrocurva		5	9		<0.1	<0.1		<0.1	<0.1
Diaphanosoma sp.	52	77	68	0.3	0.5	1.5	0.4	0.4	1.3
Eubosmina longispina	39	36	14	0.1	<0.1	0.1	0.1	<0.1	<0.1
Eubosmina tubicen	47	73	73	0.1	0.6	0.4	<0.1	0.1	<0.1
Holopedium gibberum	100	100	100	3.4	6.6	6.6	31.8	35.8	35.1
Leptodora kindtii	5	23	9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Polypthemos hamulatus		5			<0.1		*		
Polypthemos pediculus	9		5	<0.1		<0.1	0.2		<0.1
Sida crystallina	17	9	9	<0.1	<0.1	<0.1	0.2	<0.1	0.1
CALANOIDA									
Calanoid copepodid	100	100	100	21.9	10.0	12.9	16.5	4.3	5.4
Diaptomus minutus	96	73	82	1.8	0.5	0.6	3.5	0.5	0.6
Diaptomus oregonensis	87	82	91	0.9	1.4	1.8	2.6	2.4	3.1
Epischura lacustris	13	45	27	<0.1	<0.1	<0.1	0.2	0.4	0.5
Senecella calanoides		9			<0.1				<0.1
CYCLOPOIDA									
Cyclopoid copepodid	100	100	100	10.9	18.2	11.6	14.2	13.4	8.4
Cyclops bicuspidatus thomasi	57	77	68	0.2	0.5	0.6	0.5	0.9	0.9
Cyclops scutifer	61	77	59	1.4	2.2	4.1	7.8	7.0	12.7
Cyclops vernalis			9			0.2			0.4
Eucyclops speratus			27			<0.1			<0.1
Mesocyclops edax	70	82	95	0.4	0.8	0.9	2.3	2.6	2.8
Orthocyclops modestus	5		18	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Paracyclops fimbriatus poppei	5	5		<0.1	<0.1		*	*	
Tropocyclops prasinus mexicanus	87	95	100	1.3	2.9	0.9	0.5	0.7	0.2
NAUPLII									
Nauplii	100	100	100	52.0	41.9	44.8	5.0	2.3	2.4
Number of species collection ⁻¹	10.7	13.5	13.3						

* species dry weight not available

TABLE 36

Summary of crustacean zooplankton species occurrence, density and biomass in Basshaunt Lake

	% occurrence		% density		% biomass	
	1978	1979	1978	1979	1978	1979
Number of collections	7	5				
Mean density (animals L ⁻¹)			47.2	36.1		
Mean biomass (mg m ⁻³)					46.9	60.0
CLADOCERA						
<i>Bosmina longirostris</i>	100	100	1.4	2.2	0.8	0.7
<i>Chydorus sphaericus</i>	14		<0.1		<0.1	
<i>Daphnia catawba</i>	86	60	2.7	0.9	11.0	2.1
<i>Daphnia galeata mendotae</i>	57	100	0.1	2.7	0.9	14.3
<i>Daphnia longiremis</i>	14		<0.1		<0.1	
<i>Daphnia pulex</i>	100	100	2.5	7.5	20.4	36.4
<i>Diaphanosoma</i> sp.		40		<0.1		<0.1
<i>Eubosmina tubicen</i>		20		<0.1		<0.1
<i>Holopedium gibberum</i>	86	43	0.8	2.0	8.4	13.4
<i>Leptodora kindtii</i>	14		<0.1		<0.1	
<i>Polyphemus pediculus</i>	14		<0.1		0.4	
<i>Sida crystallina</i>	14		<0.1		<0.1	
CALANOIDA						
<i>Calanoid</i> copepodid	100	100	5.6	7.1	4.9	3.7
<i>Diaptomus minutus</i>	86	100	0.9	0.5	2.1	0.7
<i>Diaptomus oregonensis</i>	100	100	0.6	0.8	2.0	1.7
<i>Epischura lacustris</i>	29	80	<0.1	0.3	0.3	2.6
CYCLOPOIDA						
<i>Cyclopoid</i> copepodid	100	100	20.4	16.0	30.8	14.5
<i>Cyclops bicuspidatus thomasi</i>	29	40	<0.1	<0.1	<0.1	0.2
<i>Cyclops scutifer</i>	100	60	1.3	1.1	8.2	4.2
<i>Cyclops vernalis</i>	29	20	<0.1	<0.1	<0.1	<0.1
<i>Mesocyclops edax</i>	100	100	0.4	0.4	2.6	1.5
<i>Tropocyclops prasinus mexicanus</i>	86	60	0.3	0.4	<0.1	0.1
NAUPLII						
Naupili	100	100	62.9	57.9	7.0	3.8
Number of species collection ⁻¹		10.6	10.4			

TABLE 37

Summary of crustacean zooplankton species occurrence, density and biomass in Bigwind Lake

TABLE 38

Summary of crustacean zooplankton species occurrence, density and biomass in Buck Lake

TABLE 39

Summary of crustacean zooplankton species occurrence, density and biomass in Crosson Lake

TABLE 40

Summary of crustacean zooplankton species occurrence, density and biomass in Glen Lake

	% occurrence		% density		% biomass	
	1978	1979	1978	1979	1978	1979
Number of collections	6	4				
Mean density (animals L ⁻¹)			21.9	26.8		
Mean biomass (mg m ⁻³)					109.	99.7
CLADOCERA						
<i>Bosmina longirostris</i>	67	75	0.1	<0.1	0.1	<0.1
<i>Daphnia catawba</i>	33		<0.1		0.2	
<i>Daphnia galeata mendotae</i>	100	100	1.4	1.1	24.5	25.2
<i>Daphnia pulex</i>	100	100	1.4	1.2	23.3	26.2
<i>Diaphanosoma</i> sp.	100	75	2.1	1.1	7.8	5.6
<i>Holopedium gibberum</i>	33		<0.1		0.1	
CALANOIDA						
Calanoid copepodid	100	100	0.4	0.3	0.7	0.6
<i>Diaptomus minutus</i>	17	25	<0.1	<0.1	<0.1	<0.1
<i>Diaptomus oregonensis</i>	100	100	0.4	0.3	3.1	2.5
<i>Epischura lacustris</i>	83	100	<0.1	<0.1	2.0	3.6
CYCLOPOIDA						
Cyclopoid copepodid	100	100	4.0	0.6	12.1	2.4
<i>Cyclops bicuspidatus thomasi</i>	17	50	<0.1	<0.1	<0.1	0.3
<i>Cyclops scutifer</i>	67	50	0.3	0.3	3.8	5.1
<i>Cyclops vernalis</i>	50	50	<0.1	<0.1	0.3	0.1
<i>Mesocyclops edax</i>	17		<0.1		<0.1	
<i>Orthocyclops modestus</i>	67	25	0.1	<0.1	1.0	<0.1
<i>Tropocyclops prasinus</i> mexicanus	50	75	<0.1	<0.1	<0.1	<0.1
NAUPLII						
Nauplii	100	100	89.5	95.0	19.9	28.1
Number of species collection ⁻¹	9.2	8.3				

TABLE 41

Summary of crustacean zooplankton species occurrence, density and biomass in Gulifeather Lake

	% occurrence				% density				% biomass			
	1976	1977	1978	1979	1976	1977	1978	1979	1976	1977	1978	1979
Number of collections	2	3	7	5								
Mean density (animals L ⁻¹)					39.2	10.3	51.5	37.2				
Mean biomass (mg m ⁻³)									166.	36.6	125.	124.
<hr/>												
CLADOCERA												
Alona sp.			29				0.1				0.1	
Bosmina longirostris	100	100	100	100	3.6	3.6	11.9	4.9	0.5	0.5	2.6	0.8
Chydorus sphaericus			14				<0.1				<0.1	
Daphnia ambigua		33	71	40		0.7	0.8	3.5		0.6	0.9	3.2
Daphnia dubia				20				<0.1				<0.1
Daphnia galeata mendotae	50	33	43	60	0.6	0.1	0.2	1.3	1.2	0.4	0.8	3.3
Daphnia longiremis			43				0.1				0.2	
Daphnia pulex			29				<0.1				0.1	
Daphnia retrocurva	100	33	71	80	2.8	6.9	7.2	0.8	2.1	6.1	9.3	0.7
Diaphanosoma sp.	100	33	71	60	1.9	0.4	6.7	1.9	0.9	0.2	5.3	1.1
Holopedium gibberum	100	100	100	100	31.5	23.5	11.5	20.6	81.6	72.5	51.6	67.9
Leptodora kindtii		33	43	20		<0.1	<0.1	<0.1		0.3	0.2	0.4
CALANOIDA												
Calanoid copepodid	100	100	100	100	0.3	2.7	1.5	3.7	<0.1	0.7	0.5	1.0
Diaptomus minutus	100	33	86	100	0.1	0.3	0.7	0.5	<0.1	0.2	0.7	0.4
Diaptomus oregonensis		33	57	100		<0.1	1.1	1.3		<0.1	1.6	1.4
CYCLOPOIDA												
Cyclopoid copepodid	100	100	100	100	17.4	39.5	23.3	36.4	6.2	16.7	14.4	16.5
Cyclops bicuspidatus thomasi	50	33	57	60	5.0	<0.1	2.9	0.2	3.8	<0.1	3.8	0.2
Cyclops scutifer			43				<0.1				0.2	
Cyclops vernalis				20				<0.1				<0.1
Mesocyclops edax	50	33	57	60	<0.1	0.1	1.5	0.6	<0.1	0.3	4.1	1.2
Tropocyclops prasinus mexicanus	100	100	100	100	32.0	7.3	14.3	10.3	3.6	1.0	2.8	1.5
NAUPLII												
Nauplii	100	100	100	100	4.8	14.6	16.0	13.9	0.1	0.5	0.7	0.5

TABLE 42

Summary of crustacean zooplankton species occurrence, density and biomass in Little Clear Lake

	% occurrence				% density				% biomass								
					1976	1977	1978	1979	1976	1977	1978	1979	1976	1977	1978	1979	
	1	4	9	4													
Number of collections	1	4	9	4													
Mean density (animals L ⁻¹)									32.3	31.1	50.5	25.5					
Mean biomass (mg m ⁻³)													67.7	65.6	83.8	63.4	
CLADOCERA																	
<i>Bosmina longirostris</i>	100	75	89	100					2.5	0.5	2.0	4.2	0.7	0.1	0.7	0.9	
<i>Ceriodaphnia lacustris</i>					25							0.1				*	
<i>Chydorus sphaericus</i>		25								<0.1				<0.1			
<i>Daphnia catawba</i>		50	11							0.2	<0.1			0.4	<0.1		
<i>Daphnia dubia</i>	100	75	44	25					1.8	1.9	0.3	<0.1	3.8	4.1	0.7	<0.1	
<i>Daphnia galeata mendotae</i>	100	100	100	100					12.2	7.1	5.9	5.2	51.1	29.6	30.9	18.2	
<i>Daphnia longiremis</i>	100	75	78						0.5	2.2	2.7		1.3	5.2	8.0		
<i>Daphnia pulex</i>	100	25	89	100					0.2	<0.1	1.4	2.6	0.7	0.2	7.0	8.6	
<i>Diaphanosoma</i> sp.		50	67	75					5.0	0.6	0.9	3.3	4.5	0.6	1.0	2.5	
<i>Eubosmina tubicen</i>			11	25						<0.1	<0.1			<0.1	<0.1		
<i>Holopedium gibberum</i>	100	100	89	100					1.6	5.8	2.1	12.4	8.2	29.9	14.0	54.4	
<i>Leptodora kindtii</i>		25	11							<0.1	<0.1			0.2	<0.1		
<i>Scapholeberis kingi</i>				25							<0.1				0.2		
<i>Sida crystallina</i>		25	11							<0.1	<0.1			0.3	<0.1		
CALANOIDA																	
<i>Calanoid copepodid</i>	100	100	100	100					0.2	1.7	1.6	1.7	0.1	0.7	0.8	0.6	
<i>Diaptomus minutus</i>	100	100	89	50					3.7	1.4	0.4	0.2	3.9	1.5	0.6	0.1	
<i>Epischura lacustris</i>	100	75	22	25					0.1	0.2	<0.1	<0.1	0.3	1.7	0.2	0.2	
CYCLOPOIDA																	
<i>Cyclopoid copepodid</i>	100	100	100	100					23.1	17.8	13.2	12.3	16.6	12.7	11.9	7.4	
<i>Cyclops bicuspidatus thomasi</i>	100	75	56	25					0.4	1.1	0.1	<0.1	0.7	1.7	0.2	<0.1	
<i>Cyclops scutifer</i>		100	67	75						2.3	4.0	0.6		6.9	15.5	1.6	
<i>Eucyclops speratus</i>		25								<0.1				<0.1			
<i>Mesocyclops edax</i>	100	100	67	100					1.2	0.3	0.8	0.9	3.6	1.0	3.0	2.4	
<i>Tropocyclops prasinus mexicanus</i>	100	75	78	75					12.1	1.2	4.7	1.8	2.7	0.3	1.3	0.3	
NAUPLII																	
Nauplii		100	100	100	100				35.4	55.4	59.9	54.6	1.8	2.9	4.0	2.4	
Number of species collection ⁻¹		12.0	11.8	9.8	9.5												

* species dry weight not available

TABLE 43

Summary of crustacean zooplankton species occurrence, density and biomass in Solitaire Lake

	% occurrence			% density			% biomass		
	1977	1978	1979	1977	1978	1979	1977	1978	1979
Number of collections	4	7	4						
Mean density (animals L ⁻¹)				19.9	44.2	44.0			
Mean biomass (mg m ⁻³)							36.0	47.2	67.7
CLADOCERA									
<i>Bosmina longirostris</i>	100	100	100	1.1	1.5	12.5	0.3	0.8	4.4
<i>Daphnia ambigua</i>	25		25	<0.1		<0.1	<0.1		<0.1
<i>Daphnia catawba</i>	25			<0.1			<0.1		
<i>Daphnia dubia</i>	100	71	100	2.9	2.2	1.3	7.3	9.2	3.7
<i>Daphnia galeata mendotae</i>	100	100	100	4.3	1.4	3.0	20.8	11.4	17.3
<i>Daphnia longiremis</i>	100	100	100	1.5	1.8	0.6	4.3	8.5	2.1
<i>Daphnia pulex</i>	25	100	75	<0.1	1.0	0.4	0.4	7.5	2.1
<i>Diaphanosoma</i> sp.	25	57	75	<0.1	0.2	0.2	<0.1	0.3	0.2
<i>Holopedium gibberum</i>	75	43	100	3.1	0.1	3.4	18.6	1.3	24.3
<i>Leptodora kindtii</i>	25	14		<0.1	<0.1		0.3	<0.1	
<i>Polyphemus pediculus</i>	25	14	25	<0.1	<0.1	<0.1	0.8	0.3	0.2
<i>Sida crystallina</i>	25	71	100	<0.1	0.5	0.4	0.4	5.2	3.5
CALANOIDA									
<i>Calanoid copepodid</i>	100	100	100	17.2	15.7	26.1	8.3	12.8	14.7
<i>Diaptomus minutus</i>	100	86	75	3.3	2.8	1.3	4.0	6.0	1.9
<i>Diaptomus oregonensis</i>			14		<0.1			<0.1	
<i>Epischura lacustris</i>	75	71	50	0.1	0.1	<0.1	1.0	1.7	0.6
CYCLOPOIDA									
<i>Cyclopoid copepodid</i>	100	100	100	33.0	13.4	17.3	27.4	18.9	16.9
<i>Cyclops bicuspidatus thomasi</i>	75	86	100	0.7	1.2	1.1	1.2	3.7	2.3
<i>Cyclops scutifer</i>	100	100	100	0.6	0.7	0.6	2.3	4.3	2.7
<i>Mesocyclops edax</i>	75	57	75	0.1	0.4	0.2	0.5	2.2	0.8
<i>Tropocyclops prasinus mexicanus</i>	14	86	75	<0.1	0.2	0.4	<0.1	<0.1	0.1
NAUPLII									
Nauplii	100	100	100	31.5	56.7	31.0	1.9	5.8	2.2
Number of species collection ⁻¹	10.8	11.3	12.8						

TABLE 44

Summary of crustacean zooplankton species occurrence, density and biomass in Walker Lake

TABLE 45

BLUE CHALK LAKE

LAKE ZOOPLANKTON MONTHLY SUMMARY - ABSOLUTE DENSITY (#/M^3)
 FROM 76 08 26 TO 76 11 04
 ICE-FREE PERIOD
 YEAR 1976

	AUG	SEP	OCT	NOV	MEAN	HI	LOW
CLADOCERA							
B. LONGIR	316	1567	992	652	1171	2101	229
CH. SPHAE			7	27	4	30	0
DA. DUBIA	706	1978	813	121	1265	3136	59
D. G. MEN	220	247	261	782	282	858	59
DA. PULEX	27	20	10	27	16	30	0
DI. LEUC	323	684	91	27	358	1302	0
H. GIBBER	102	122	31	53	76	178	0
SIDA CYS		14	3		8	30	0
SUB TOTAL:	1694	4632	2208	1690	3180		
CALANOIDA							
CAL. COP	9145	10810	4959	560	7514	15089	89
D. MINUT	1349	2144	11028	15631	6792	16124	444
D. OREGON	145	47	192	311	133	325	0
E. LACUST	27	47	46	6	43	59	0
SUB TOTAL:	10666	13048	16225	16507	14483		
CYCLOPOOIDA							
CYCL. COP	1855	3416	1442	1268	2308	5030	947
C. B. THO	109	6	73	217	55	237	0
C. SCUTIF	3	1			<1	8	0
M. EDAX	185	213	116	11	157	355	0
T. P. MEX	36	214	459	500	326	503	0
SUB TOTAL:	2188	3852	2090	1997	2846		
NAUPLII							
NAUPLII	11166	13255	3816	4766	8441	18343	1420
SUB TOTAL:	11166	13255	3816	4766	8441		
TOTAL:	25714	34787	24338	24960	28950		

BLUE CHALK LAKE

LAKE ZOOPLANKTON MONTHLY SUMMARY - ABSOLUTE DENSITY (#/M³)
 FROM 77 04 21 TO 77 11 22
 ICE-FREE PERIOD
 1977

TABLE 46

	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	MEAN	HI	LOW
CLADOCERA											
E LONGSTR	102	144	86	2	54	96	137	205	99	319	0
DA RMBIG									12	59	0
DA CUBIA	23	87	189	82	208	506	48	16	161	828	0
D G MEN	175	772	1742	343	571	547	711	2550	933	3876	0
DA FILEX	49	229	371	64	83	111	88	237	160	651	0
DA LEUC	7	11	48	200	628	326	35		178	1095	0
EUE TUBI									2	3	0
H GIBBER									43	<1	0
L FINCTI									14	89	0
EUE LONG	149	296	858	177	150	201	628	1174	454	1596	22
SUB TOTAL	505	1538	3321	912	1698	1787	1698	4199	2006		
CALANOIDA											
CHL COP	903	10822	29472	21391	13448	15829	5230	128	13710	42367	0
C MINUT	14076	11521	649	810	1022	1051	5392	11650	4721	21302	207
C OREGON	482	239	6	240	291	24	224	264	195	503	0
E LOCUST		7	81	39	14	38	21	19	30	178	0
SUB TOTAL	15467	22589	30208	22479	14776	16941	10867	12061	18656		
COELIODOIDA											
CYCL COP	905	3194	2657	4784	3348	2338	1255	3226	2878	6568	562
C E THO	367	89	40	280	266	115	513	1161	321	1479	0
C SCUTIF	1526	878	274	158	24				255	1568	0
M ECOP	59	129	28	78	321	145	45	10	110	414	0
P F POP					13	1			2	30	0
T P MEX	45	5	13	<1	26	60	121	96	44	178	0
SUB TOTAL	2902	4295	3012	5301	3998	2659	1934	4486	3611		
NAUPLII											
NAUFLII	19827	43271	15070	22715	29601	15917	7824	4551	20530	58586	1420
SUB TOTAL	19827	43271	15070	22715	29601	15917	7824	4551	20530		
TOTAL	38702	71694	51612	51407	50072	37305	22322	25297	44803		

BLUE CHALK LAKE LAKE ZOOPLANKTON MONTHLY SUMMARY - ABSOLUTE DENSITY (#/M³)
 FROM 78 05 11 TO 78 11 21
 ICE-FREE PERIOD
 YEAR 1978

TABLE 47

	MAY	JUN	JUL	AUG	SEP	OCT	NOV	MEAN	HI	LOW
CLADOCERA										
B. LONGIR	78	87	2	16	123	41	39	54	190	0
CH. SPHAE				<1	8		1	39	0	0
DA. CHTAW	37	36	7	11	47	22	23	196	0	0
DH. DUBIA	190	1845	1032	1634	1785	406	46	1077	3612	0
D. G. MEN	650	1652	708	554	1824	1967	2793	1423	3730	283
DA. LONG			185					30	819	0
DA. PULEX	241	703	707	134	35		273	2158	0	0
DH. RETRO	71	59	47	16			27	223	0	0
DIA. LEUC	90	181	238	937	579	45	322	1302	0	0
EUB. TUBI		130		17	50		30	555	0	0
H. GIBBER	237	285	168	162	330	64	127	196	617	0
L. KNOTI		11	38	7	2		9	62	0	0
EUB. LONG	801	2855	2256	208	1413	326	263	1217	8333	0
SUB TOTAL:	2396	7844	5388	3697	6197	2871	3269	4683		
CHILOPODA										
CAL. COP	12964	15810	14920	8630	12200	4304	70	9647	22962	0
D. MINUT	502	285	874	540	661	3149	5098	1479	6693	136
D. OREGON	9	167	494	335	432	862	2192	601	3237	0
E. LACUST	24	113	296	126	140	56	3	118	446	0
SUB TOTAL:	13500	16375	13584	9631	13433	8271	7363	11846		
CYCLOPODIA										
CYCL. COP	10685	10810	8602	5171	5159	2729	3509	6620	13690	1585
C. B. THO		143	259	381	406	425	548	314	713	0
C. SCUTIF	833	990	537	23	3	30	3	334	1488	0
M. EDHX	47	39	209	218	491	417	42	226	754	0
T. P. MEX	9	<1		34	2		7	61	0	0
SUB TOTAL:	11575	14982	9808	5826	8060	3601	4102	7501		
NEUPLII										
NEUPLII	21316	23144	29579	23697	26943	10270	8020	20966	40176	3873
SUB TOTAL:	21316	23144	29579	23697	26943	10270	8020	20966		
TOTAL	48786	59345	58359	42852	52633	25113	22753	44995		

TABLE 48

BLUE CHALK LAKE ZOOPLANKTON MONTHLY SUMMARY - ABSOLUTE DENSITY (#/M³)
 FROM 79 05 17 TO 79 10 09
 ICE-FREE PERIOD
 YEAR 1979

	MAY	JUN	JUL	AUG	SEP	OCT	MEAN	HI	LOW
CLADOCERA									
B. LONGIR	173	76	20	170	149	193	116	328	7
DA. AMBIG						24	1	54	0
DA. CATAM	28	5	11		9	<1	8	84	0
DA. DUBIA	126	603	319	1385	1401	1368	876	2483	0
D. G. MEN	3881	3845	533	794	864	615	1671	7875	0
DA. PULEX	239	444	64	18	8		134	916	0
DIA. LEUC	30	39	448	1766	888	645	708	3395	0
EUB. TUBI	7	82	16	35	16		32	366	0
H. GIBBER	72	75	159	29	15		66	315	0
L. KINDTI									
EUB. LONG	1448	2140	201	218	165	313	726	3112	36
SUB TOTAL:	6005	7385	1844	4425	3545	3159	4378		
CHALANOIDA									
CAL. COP	15788	33725	29007	27261	21574	17881	26297	40879	8293
D. MINUT	1795	438	1095	1436	434	205	908	2337	55
D. OREGON	109	67	177	216	64	60	125	309	0
E. LACUST	28	108	161	27	25	<1	71	429	0
SUB TOTAL:	17720	34338	31340	28540	22097	18146	27401		
CYCLOPOIDIA									
CYCL. CUP	4821	6251	9842	5967	3523	3591	6090	13438	1569
C. B. THO	37	46	118	201	295	312	162	523	0
C. SCUTIF	2044	1303	636	105	19		629	3130	0
C. VERNAL			11				2	52	0
E. SPERAT			2						
M. EDRA	785	178	567	800	211	168	459	1972	0
T. P. MEX	28	5			8	2405	155	5411	0
SUB TOTAL:	7715	7795	11176	7073	4056	6476	7500		
NAUPLII									
NAUPLII	36277	46937	44575	29237	24501	16077	35061	62095	6169
SUB TOTAL:	36277	46937	44575	29237	24501	16077	35061		
TOTHL	67718	96455	88934	69675	54199	43857	74340		

TABLE 49

CHUB LAKE

LAKE ZOOPLANKTON MONTHLY SUMMARY - ABSOLUTE DENSITY (#/M³)
 FROM 76 07 13 TO 76 11 02
 ICE-FREE PERIOD
 YEAR 1976

	JUL	AUG	SEP	OCT	NOV	MEAN	HI	LOW
CLADOCERA								
ALONA SP			7			2	30	0
B. LONGIR		3	234	875	2020	342	2100	0
CE. PULCH			10	38	3	13	59	0
DA. AMBIG	21	4				5	37	0
DA. DUBIA	<1	33	86	13		36	162	0
D. G. MEN	22	6				5	37	0
DA. LONG	713	212	77	25	56	202	1218	0
DA. RETRO	<1	3	91	407	885	153	917	0
DA. ROSEA	<1	4	2			2	16	0
DA. LEUC		13	392	48		122	602	0
H. GIBBER	410	1013	856	221	201	641	3021	89
L. KINDTI	11	6	10	<1		6	30	0
P. PEDIC	<1	16	2			5	30	0
SUB TOTAL:	1178	1297	1780	1629	3165	1533		
CALANOIDA								
CAL. COP	4976	6484	10618	2987	832	6280	13372	740
D. MINUT	1019	1507	3969	5865	14731	3531	15385	295
D. OREGON			7			2	30	0
E. LACUST	460	116	169	35	29	161	1044	0
SUB TOTAL:	6455	8107	14762	8888	15591	9974		
CYCLOPOOIDA								
CYCL. COP	1645	2536	3689	3148	3959	2896	4882	1221
C. SCUTIF	278	41				56	435	0
E. SPERAT	11	15	5	<1		7	30	0
M. EDAX	123	298	1008	252	92	444	1656	0
T. P. MEX	4	323	1682	963	1133	827	2326	0
SUB TOTAL	2059	3213	6383	4364	5184	4230		
NAUPLII								
NAUPLII	15235	19934	23010	35176	37658	24538	37721	10859
SUB TOTAL	15235	19934	23010	35176	37658	24538		
TOTAL	24928	32551	45935	50057	61598	40275		

CHUB LAKE

 LAKE ZOOPLANKTON MONTHLY SUMMARY - ABSOLUTE DENSITY (#/M³)
 FROM 77 04 22 TO 77 11 27
 ICE-FREE PERIOD
 YEAR 1977

TABLE 50

	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	MERN	HI	LOW
CLADOCERA											
B. LONGIR	66	408	59	26	13	7	17	80	87	1568	0
CE. FULCH		7							<1	30	0
DA. AMBIG	20	10	<1	12	5			7	6	30	0
DA. DUBIA					11	16			4	59	0
D. G. MEN						7			<1	30	0
DA. LONG	142	145	56	49	17	32	2	14	49	266	0
DA. RETRO	5	464	334	187	954	2134	1748	593	886	3994	0
DA. LEUC	13		14	387	1604	528	184	8	385	2870	0
H. GIBBER	28	1253	1202	1761	14	142	791	362	770	3994	0
L. KENDI				7					<1	30	0
P. FEDIC									<1	30	0
SUB TOTAL :	261	2301	1665	2435	2618	2866	2742	1065	2191		
CALANOIDA											
CHL. COP	255	12874	13404	13696	14565	13040	4848	224	10168	21893	0
D. MINUT	9848	2433	418	2139	4196	877	4233	6837	3208	12574	207
E. LACUST		7	67	67	77	77	35	38	41	177	0
SUB TOTAL :	10103	15314	13889	15903	18748	13952	9119	7061	13417		
CYCLOPOIDA											
CYCL. COP	3866	19157	11006	6271	4299	5486	8819	6224	8624	27544	1893
C. B. THO		4	10	17	<1	7			5	30	0
C. SCUTIF	805	1611	439	115	46	2			341	2574	0
M. EDIFX	819	507	39	108	144	204	44		177	1598	0
T. P. MEX	684	458	72	151	224	780	937	503	454	1716	0
SUB TOTAL :	6174	21737	11566	6661	4713	6480	9800	6727	9601		
NAUPLII											
NAUPLII	29993	39870	14783	20984	27033	16419	8158	4187	19481	53698	2840
SUB TOTAL :	29993	39870	14783	20984	27033	16419	8158	4187	19481		
TOTAL :	46531	79222	41903	45983	53112	39717	29819	19039	44690		

TABLE 51

CHUB LAKE LAKE ZOOPLANKTON MONTHLY SUMMARY - ABSOLUTE DENSITY (#/M^3)

FROM 78 05 15 TO 78 11 07

ICE-FREE PERIOD

YEAR 1978

	MAY	JUN	JUL	AUG	SEP	OCT	NOV	MEAN	HI	LOW
CLADOCERA										
B. LONGIR	32	75	115	178	2639	956	598	709	4762	0
CE. PULCH					9	4		2	23	0
CH. SPHAE				11	8			3	45	0
DA. AMBIG	49	102	145	37	11			56	516	0
DA. CATAN		4	11	5				4	34	0
D. G. MEN	10	6	27	9	17	68	23	24	162	0
DA. LONG	225	328	334	112	72	11		169	710	0
DA. PULEX		<1	4					<1	20	0
DA. RETRO	68	540	293	70	292	380	49	281	840	0
DIA. LEUC	35	145	484	1090	1287	318	45	582	2087	0
EUB. TUBI	20	3						2	55	0
H. GIBBER	177	767	2455	688	246	1838	1039	1108	5765	57
L. KINDTI		<1		1	2	<1		<1	6	0
P. PEDIC		6						1	27	0
SUB TOTAL:	617	1978	3867	2201	4582	3576	1754	2943		
CYANOIDA										
CAL. COP	924	8657	8644	8166	7341	5100	748	6700	11750	0
D. MINUT	3186	1092	1092	784	231	1949	6545	1449	7171	54
D. OREGON						154		27	632	0
E. LACUST			3	5		6		2	34	0
SUB TOTAL:	4110	9749	9739	8955	7573	7209	7293	8179		
CYCLOPOIDA										
CYCL. COP	1446	4966	9791	9283	31832	13964	5724	12451	47977	835
C. B. THO	25	8	8		8	6		7	45	0
C. SCUTIF	610	357	72	14				131	672	0
C. VERNAL				17	6	67	11	16	162	0
M. EDAX	32	60	249	142	272	86	49	145	510	0
T. P. MEX	106	30	934	3204	6829	11299	6337	4150	16968	0
SUB TOTAL:	2218	5421	11053	12660	38946	25422	12121	16901		
NAUPLII										
NAUPLII	41582	7436	11279	18490	19788	6826	3849	15020	60599	3414
SUB TOTAL:	41582	7436	11279	18490	19788	6826	3849	15020		
TOTAL:	48528	24583	35939	42307	70889	43033	25016	43042		

TABLE 52

CHUB LAKE LAKE ZOOPLANKTON MONTHLY SUMMARY - ABSOLUTE DENSITY (#/M³)
 FROM 79 05 07 TO 79 10 09
 ICE-FREE PERIOD
 YEAR 1979

	MAY	JUN	JUL	AUG	SEP	OCT	MEAN	HI	LOW
CLADOCERA									
B. LONGIR	193	257	17	47	146	559	139	694	0
DA. AMBIG	35	98	<1	3	15	<1	25	143	0
DA. DUBIA					42	9	18	45	0
D. G. MEN	14	28	2	42	43	80	153	321	0
DA. LONG	174	217	205	153	377	538	133	794	0
DA. RETRO	29	34	9	78	2249	954	375	698	5252
DA. LEUC	24	49	141	2249					0
EUB. TUBI		6							0
H. GIBBER	2838	3325	3291	1175	703	839	1	24	0
L. KINDTI	6	6	3	4			4	24	0
P. PEDIC							<1	19	0
SUB TOTAL:	3209	4019	3672	3755	2251	2392	3335		
CALANOIDA									
CAL. COP	10130	12483	8316	6351	4955	6274	8241	20422	0
D. MINUT	1583	393	594	1084	481	473	777	2365	85
E. LACUST		21	<1	22	19	14	13	48	0
SUB TOTAL:	11713	12897	8911	7456	5455	6760	9032		
CYCLOPOIDA									
CYCL. COP	1365	5521	4050	2867	2516	2903	3319	8581	338
C. B. THO			3		4	27	3	50	0
C. SCUTIF	815	303	135	16	4	20	217	1305	0
M. EDAX	279	181	147	377	68	48	199	846	0
T. P. MEX	205	111	443	608	771	1297	488	1741	21
SUB TOTAL:	2664	6116	4777	3868	3365	4296	4226		
NAUPLII									
NAUPLII	16931	6934	9780	11987	12398	14088	11535	23094	3095
SUB TOTAL:	16931	6934	9780	11987	12398	14088	11535		
TOTAL:	34516	29966	27140	27067	23469	27536	28127		

TABLE 53

DICKIE LAKE
 LAKE ZOOPLANKTON MONTHLY SUMMARY - ABSOLUTE DENSITY (#/M^3)
 FROM 76 08 17 TO 76 10 26
 ICE-FREE PERIOD
 YEAR 1976

	AUG	SEP	OCT	MEAN	HI	LOW
CLADOCERA						
ALONA SP	30			12	59	0
B. LONGIR	148	178	163	160	296	0
DA. RETRO	3166	3905	888	2402	3905	355
DIA. LEUC	799	503	163	485	1124	30
EUB. CORE		178		36	355	0
EUB. TUBI	799	681	2249	1355	3787	0
H. GIBBER	355	237	1346	728	2544	59
SUB TOTAL:	5296	5680	4808	5177		
CALANOIDA						
CAL. COP	21835	19054	2397	13503	26036	2189
D. MINUT	4852	2219	4009	3988	7692	325
D. OREGON			15	6	30	0
SUB TOTAL:	26687	21273	6420	17497		
CYCLOPOOIDA						
CYCL. COP	4024	3373	991	2680	4260	503
C. SCUTIF	30	30		18	59	0
C. VERNAL	30			12	59	0
M. EDAX	178	414	148	213	710	0
T. P. MEX	473	532	119	343	591	59
SUB TOTAL:	4733	4349	1258	3266		
NAUPLII						
NAUPLII	10355	7752	1509	6296	11953	1006
SUB TOTAL:	10355	7752	1509	6296		
TOTAL	47070	39052	13995	32236		

TABLE 54

DICKIE LAKE
LAKE ZOOPLANKTON MONTHLY SUMMARY - ABSOLUTE DENSITY (#/M³)
FROM 77 04 14 TO 77 11 14
ICE-FREE PERIOD
YEAR 1977

	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	MEAN	HI	LOW
CLADOCERA											
A. LONA SP											
B. LONGIR	85	212	134	32	80	133	14	2	30	0	0
C. SPHAE											
D. AMBIG											
D. DUBIA											
D. G. MEN											
DA. LONG											
DA. RETRO	2	995	1752	1836	5327	5164	4875	2338	3010	12663	0
DA. LEUC	2	106	152	1187	1918	612	320	23	620	4201	0
EUB. TUBI	725	1497	807	178	686	355	1424	2389	922	2811	0
H. GIBBER	159	3556	8241	8199	1203	4033	1784	1805	3986	23787	0
L. KINDTI											
P. PEDIC	27	35	26	31				17	178	0	0
SUB TOTAL :	974	6459	11122	11486	9245	10516	9313	6680	8831		
CALANOIDA											
CAL. COP	127	17842	15470	15430	11181	11152	6835	30	11173	42604	0
D. MINUT	15399	9052	2774	7838	5778	2000	3961	8	6293	21420	1183
D. OREGON											
E. LACUST	7	5	20	4	15			7	59	0	0
SUB TOTAL :	15527	26902	18249	23288	16963	13167	10796	9431	17474		
CYCLOPOIDA											
CYCL. COP	3421	1411	1029	2872	3561	4515	3983	1257	2828	7396	237
C. B. THO											
C. SCUTIF											
C. VERNAL	18	16	106	754	10	56					
E. AGILIS											
M. EDAX	73	277	30	549	357	415	294	30	284	710	0
O. MODEST											
T. P. MEX	18	17	45	103	25	343	823	1138	451	385	0
SUB TOTAL :	3529	1722	1231	4349	4324	5808	5449	1790	3663		
NAUPLII											
NAUPLII	26517	31565	2863	6558	8182	3688	3550	732	10171	47574	355
SUB TOTAL :	26517	31565	2863	6558	8182	3688	3550	732	10171	40138	
TOTAL :	46546	66648	33464	45681	38714	33179	29107	18632	40138		

TABLE 55

DICKIE LAKE

LAKE ZOOPLANKTON MONTHLY SUMMARY - ABSOLUTE DENSITY (#/M^3)
 FROM 78 05 04 TO 78 11 23
 ICE-FREE PERIOD
 YEAR 1978

	MAY	JUN	JUL	AUG	SEP	OCT	NOV	MEAN	HI	LOW
CLADOCERA										
AC. HARPF					17	32		7	95	0
ALONA SP	2				6	16	191	27	370	0
B. LONGIR	224	303	480	466	596	833	2746	745	7522	22
CE. PULCH					7			1	15	0
CH. BICOR				4	3			1	15	0
CH. SPHAE				2				1	15	0
DA. AMBIG	72	66	111	59		10	47		92	0
DA. CATAW	12	4		2				3	332	0
DA. DUBIA				14	26	10		7	67	0
D. G. MEN	48	15	23	36	52	40	79	40	185	0
DA. LONG	103	30	7	13	13	1		23	294	0
DA. PULEX	9				4	3		2	43	0
DA. RETRO	496	629	36	9				166	1427	0
DA. LEUC	12	63	77	209	495	94	18	144	952	0
EUB. TUBI	316	386	11					101	1174	0
H. GIBBER	2741	5441	88	11	3	<1	13	1186	13068	0
I. SPINIF				4				<1	20	0
L. KINDTI	1	2	2	24	32	4		10	55	0
P. PEDIC				3	1			<1	21	0
SIDA. CRYST			2	21	7			5	62	0
SUB TOTAL	4037	6939	837	888	1262	1045	3094	2522		
CALANOIDA										
CAL. COP	3346	9606	4238	1139	758	567	341	2923	18569	0
D. MINUT	5169	1427	836	175	40	90	833	1167	7677	15
D. OREGON				3	6	29		6	129	0
E. LACUST	<1	12				7		3	32	0
SUB TOTAL	8515	11046	5074	1317	804	693	1174	4099		
CYCLOPOOIDA										
CYCL. COP	1620	2252	3124	3319	3479	3262	4357	3038	8018	0
C. B. THO	12			8	14	12		7	49	0
C. SCUTIF	88	201	533	55	1			131	848	0
C. VERNAL					9	34	28	10	95	0
E. AGILIS	5					3		1	21	0
M. EDAX	110	126	413	193	6	<1	13	128	995	0
O. MODEST			10	<1	3			2	45	0
T. P. MEX	70	20	19	161	1264	2252	2734	880	3952	0
SUB TOTAL	1902	2604	4099	3737	4777	5564	7131	4198		
NAUPLII										
NAUPLII	41898	7249	8525	5316	5009	5228	3779	10724	81030	1623
SUB TOTAL	41898	7249	8525	5316	5009	5228	3779	10724		
TOTAL	56352	27838	18535	11258	11853	12529	15178	21543		

TABLE 56

DICKIE LAKE LAKE ZOOPLANKTON MONTHLY SUMMARY - ABSOLUTE DENSITY (#/M³)
 FROM 79 05 14 TO 79 10 11
 ICE-FREE PERIOD
 YEAR 1979

	MAY	JUN	JUL	AUG	SEP	OCT	MEAN	HI	LOW
CLADOCERA									
A. HARP	10			2	2		8	119	0
ALONA SP	7915	924	203	200	389	194	1257	9109	0
B. LONGIR				8	39	195	2	37	0
CH. SPHAE	366	431	552	6			264	1115	0
DA. AMBIG	51	52	23	9			17	216	0
DA. DUBIA	94	20					21	163	0
D. G. MEN	27	3					4	53	0
DA. LONG	387	190	45	7	4		93	735	0
DA. RETRO			40	1794	4660	3402	1574	6527	0
DA. LEUC	43	43							
EUB. TUBI	117	30		4			9	108	0
H. GIBBER	2647	1812	139		17	19	696	4202	0
L. KINDTI	199	138	4	9	39		61	462	0
SUB TOTAL:	11757	3643	1015	2033	5187	3811	4008		
CHLAMYDIA									
CYL. COP	9104	10884	6694	2686	19345	26051	10926	31336	1339
D. MINUT	2731	1858	1363	1611	933	292	1504	5357	66
D. OREGON	27	3	11	1			6	53	0
E. LACUST	26	23		13	71	19	26	119	0
SUB TOTAL:	11888	12768	8068	4311	20349	26362	12462		
COELOPODIA									
CYL. COP	2758	2016	1298	10650	12327	4146	5954	18227	0
C. B. THO	27	3			17	19	8	60	0
C. SCUTIF	1035	826	343				353	1630	0
C. VERNAL	477	73	6	4	136		98	761	0
E. AGILIS	11	1	5				3	54	0
M. EDAX	188	75	118	120	184	78	128	431	0
O. MODEST			6		2	39	5	58	0
T. P. MEX	100	126	118	6893	17777	13757	6050	28571	0
SUB TOTAL:	4584	3130	1889	17673	30444	18040	12600		
NAUPLII									
NAUPLII	15523	18157	14968	24733	13364	5664	16684	43596	5184
SUB TOTAL:	15523	18157	14968	24733	13364	5664	16684		
TOTAL:	43753	37698	25940	48749	69343	53876	45754		

TABLE 57

HARP LAKE

LAKE ZOOPLANKTON MONTHLY SUMMARY - ABSOLUTE DENSITY (0/10³)
 FROM 76 08 11 TO 76 10 27
 ICE-FREE PERIOD
YEAR 1976

	AUG	SEP	OCT	MEAN	HI	LOW
CLADOCERA						
B. LONGIR	2073	2688	2701	2530	3441	1955
C. LACUS	<1			<1	4	0
CH. SPHAE	21	41	29	32	70	0
D. G. MEN	154	89	38	88	408	0
DA. RETRO	15			4	77	0
DI. LEUC	1010	902	478	781	1477	22
H. GIBBER	1484	653	414	764	2480	36
L. KINDTI	6	6	4	5	19	0
P. PEDIC	24	4	3	9	66	0
SIDA CRY	4			1	11	0
SUB TOTAL:	4711	4375	3666	4214		
CALANOIDA						
CAL. COP	5319	5839	5515	5590	7969	3250
D. MINUT	526	136	1066	563	2377	10
D. SICILI			<1	<1	2	0
E. LACUST	15	8	93	40	196	0
S. CALAN	<1	<1	<1	<1	2	0
SUB TOTAL:	5860	5984	6676	6195		
CYCLOPOOIDA						
CYCL. COP	4067	3816	4314	4056	4748	3372
C. B. THO	160	101	138	129	376	79
C. VERNAL	24	16	2	13	30	0
M. EDAX	48	31	11	28	54	0
T. P. MEX	861	679	741	748	1290	337
SUB TOTAL	5160	4642	5206	4974		
NAUPLII						
NHPUPLII	5514	1444	802	2276	11076	0
SUB TOTAL	5514	1444	802	2276		
TOTAL	21246	16446	16349	17659		

HARF LAKE

 LAKE ZOOPLANKTON MONTHLY SUMMARY - ABSOLUTE DENSITY (#/M³)
 FROM ?? 04 19 TO ?? 11 23
 ICE-FREE PERIOD
 YEAR 1977

TABLE 58

	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	MEAN	HI	LOW
CLADOCERA											
A. ALONIA SP	56	671	2284	1776	1874	3419	3171	9	<1	30	0
B. LONGIR	6				7			687	1926	6509	0
C. LACUS					12			<1	30	0	0
CH. SFHAE		7	<1		45	154	108	257	45	740	0
D. G. MEN		11	34		21	12	67	50	64	237	0
DA. RETRO					12				5	59	0
DIA. LEUC	2	75	338	1239	1062	944	192	21	544	1864	0
EUB. CORE								9	<1	30	0
H. GIBBER	47	1733	2166	2994	1931	1235	332	32	1468	4645	0
L. KINDTI		7	7						2	30	0
SUB TOTAL:	105	2503	4829	6075	5052	5714	4019	849	4055		
CHALANOIDA											
CHL. COP	7651	9223	7268	7236	7043	4844	622	6143	16331		0
D. MINUT	1341	1140	696	2183	762	201	372	2341	1072	3609	118
D. OREGON							9	<1	30	0	0
D. SICILI								2	3	30	0
E. LACUST	66	148	66	27	10	12	16	12	46	385	0
S. CALAN					21		18	5	59	0	0
SUB TOTAL:	1341	8856	10067	9516	8032	7275	5230	3006	7270		
CYCLOPOIDA											
CYCL. COP	725	2078	3591	4693	3301	4266	3233	2211	3243	8994	325
C. B. THO	356	354	114	218	133	41	79	375	190	592	0
C. SCUTIF						11			1	30	0
C. VERNAL		9	18	33	<1	17	3		11	89	0
M. EDAX	12	177	15	42	24	32	3		42	414	0
O. MODEST	18	11	<1						2	30	0
T. P. MEX	239	160	127	414	227	381	622	509	338	1095	0
SUB TOTAL:	1350	2789	3865	5399	3684	4748	3940	3094	3828		
NAUPLII											
NNAUPLII	13371	14208	3666	3296	3918	2945	837	360	4788	21077	89
SUB TOTAL:	13371	14208	3666	3296	3918	2945	837	360	4788		
TOTAL:	16167	28355	22426	24286	20686	20681	14026	7309	19341		

TABLE 59

HARP LAKE LAKE ZOOPLANKTON MONTHLY SUMMARY - ABSOLUTE DENSITY (#/M^3)

FROM 78 05 10 TO 78 11 22

ICE-FREE PERIOD

YEAR 1978

	MAY	JUN	JUL	AUG	SEP	OCT	NOV	MEAN	H1	LOW
CLADOCERA										
B. LONGIR	459	2996	5821	1387	3260	2265	719	2586	7611	61
CH. SPHAE	3	<1	15	149	897	545	207	273	1878	0
DA. CATAW	24	4	3	6				5	36	0
D. G. MEN	21	105	129	478	452	76	23	198	769	0
DA. LONG					8	2		1	41	0
DA. PULEX				6				<1	27	0
DA. RETRO	28	109	229	68	3			67	385	0
DIA. LEUC	42	293	2122	3451	1772	192	34	1236	4499	0
EUB. TUBI				7	847	1218	255	352	2694	0
H. GIBBER	531	2486	1661	857	764	697	209	1086	2984	0
L. KINDTI	<1	<1	7	1				1	28	0
P. PEDIC				6				<1	27	0
SIDA CRYST		5	14	19	26			10	108	0
SUB TOTAL:	1109	6000	10001	6435	8029	4995	1448	5818		
CALANOIDA										
CAL. COP	1733	12122	10532	7726	8468	5167	732	7124	19176	26
D. MINUT	1067	412	603	336	70	787	3708	877	6148	15
D. OREGON	4	12	20	8				7	84	0
D. SICILI	60	54	9	8	18	1	15	22	100	0
E. LACUST	8	70	56	19	63	45	12	42	128	0
S. CALAN		37	92	76	208	24	24	71	625	0
SUB TOTAL:	2873	12707	11312	8173	8827	6025	4492	8143		
CYCLOPODIA										
CYCL. COP	1631	3575	5205	6668	8423	5462	3251	5118	9797	321
C. B. THO	363	292	198	203	200	247	717	297	862	92
C. SCUTIF	2	<1	9					2	28	0
C. VERNAL		2	23	3	11	2		6	58	0
M. EDAX	13	63	76	132	64	8		55	192	0
T. P. MEX	355	91	361	619	1816	2404	1561	1040	3662	0
SUB TOTAL:	2363	4025	5872	7624	10514	8122	5529	6518		
NAUPLII										
NAUPLII	8751	6015	5187	5864	5320	2016	1871	4949	10545	702
SUB TOTAL:	8751	6015	5187	5864	5320	2016	1871	4949		
TOTAL:	15096	28747	32372	28096	32689	21158	13339	25428		

TABLE 60

HARP LAKE

LAKE ZOOPLANKTON MONTHLY SUMMARY - ABSOLUTE DENSITY (#/M^3)
FROM 79 05 09 TO 79 09 26
ICE-FREE PERIOD
YEAR 1979

	MAY	JUN	JUL	AUG	SEP	MEAN	HI	LOW
CLADOCERA								
B. LONGIP	3214	9441	3730	873	1642	3852	11340	58
CH. SPHAE	38	44	16	4	42	28	94	0
DA. AMBIG	<1	8				2	31	0
DA. DUBIA	<1	8		12		5	38	0
D. G. MEN	64	187	246	257	276	213	488	0
DA. PULEX	4					<1	14	0
DA. RETRO	12	43	60			24	159	0
DIA. LEUC	25	250	991	1495	1245	839	2357	0
EUB. TUBI	110	150	366	120	597	268	824	0
H. GIBBER	1390	2563	2193	510	321	1426	4209	5
L. KINDTI		43	19	27		20	185	0
P. PEDIC				4		<1	17	0
SIDA. CRYs				4		<1	17	0
SUB TOTAL:	4859	12737	7621	3304	4123	6678		
CALANOIDA								
CAL. COP	10013	19044	19687	13884	9417	14837	22609	52
D. MINUT	677	365	509	189	57	350	1101	0
D. OREGON	9		7	<1		3	32	0
D. SICILI	40	21	16	25	9	21	89	0
E. LACUST	19	121	34	73	21	57	185	0
S. CAL. CP	4	141	108	107	56	89	308	0
SUB TOTAL:	10762	19691	20361	14278	9560	15356		
CYCLOPODIA								
CYCL. COP	2020	3920	5518	6416	5900	4896	8722	492
C. B. THO	394	161	243	166	140	213	534	0
C. SCOUTIF	16	2				3	30	0
C. VERNAL	1	56	14	<1	13	18	110	0
M. EDAX	31	10	49	80	47	44	207	0
T. P. MEX	456	169	425	411	770	436	1179	74
SUB TOTAL:	2918	4318	6250	7074	6870	5610		
NAUPLII								
NAUPLII	12068	7293	6736	4340	2885	6448	22517	1465
SUB TOTAL:	12068	7293	6736	4340	2885	6448		
TOTAL	30607	44040	40968	28997	23438	34092		

TABLE 61

JERRY LAKE
 LAKE ZOOPLANKTON MONTHLY SUMMARY - ABSOLUTE DENSITY (#/M^3)
 FROM 76 08 11 TO 76 10 27
 ICE-FREE PERIOD
 YEAR 1976

	AUG	SEP	OCT	MEAN	HI	LOW
CLADOCERA						
B. LONGIR	715	9	7	192	4023	0
D. G. MEN	788	120	36	264	1657	0
DIA. LEUC	398	323	196	298	727	14
EUB. CORE	<1	2	<1	<1	3	0
EUB. TUBI			<1	<1	4	0
H. GIBBER	31	46	211	100	832	0
SUB TOTAL:	1931	499	452	854		
CALANOIDA						
CAL. COP	7426	8717	4916	7049	10118	3076
D. MINUT	120	52	1515	583	4884	0
E. LACUST	184	217	150	185	302	85
S. CALAN			4	1	17	0
SUB TOTAL:	7730	8986	6585	7818		
CYCLOPOOIDA						
CYCL. COP	2640	3236	2068	2671	3253	1386
C. B. THO	23	19	306	121	841	0
C. VERNAL	<1	6	217	79	769	0
M. EDAX	6	3	5	4	19	0
T. P. MEX	52	697	318	397	1210	11
SUB TOTAL:	2721	3961	2914	3272		
NAUPLII						
NAUPLII	1499	654	178	706	4180	4
SUB TOTAL:	1499	654	178	706		
TOTAL:	13882	14099	10129	12651		

JEFFREY LAKE

LAKE ZOOPLANKTON MONTHLY SUMMARY - ABSOLUTE DENSITY (#/M^3)
FROM ?? 04 19 TO ?? 11 23
ICE-FREE PERIOD
YEAR 1977

TABLE 62

	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	MERN	HI	LOW	
CLADOCERA												
B. LONGIR	11		50	81	565	513	73	16	182	1390	0	
DH. DUBIA					8	10		2	30	0	0	
D. G. MEN		97	1179	1152	284	360	40	25	438	2722	0	
DH. FILEX					8	10		2	30	0	0	
DH. LEUC			43	250	978	1235	616	192	7	468	1627	0
EUB. TUBI								9	<1	30	0	0
H. GIBBER		6	933	111	16	<1			148	1538	0	0
L. KINDTI	<1	10					5	8		1	30	0
P. PEDIC									2	30	0	0
SUB TOTAL:	12	156	2412	2322	2115	1515	313	57	1245			
CALANOIDA												
CAL. COP	95	8926	10910	13654	10093	7831	3459	74	7687	28402	0	
D. MINUT	4281	4727	307	322	564	249	2363	3152	1759	8165	0	0
D. OREGON								79	8	260	0	0
E. LACUST		24	100	53	22	22	6	<1	32	177	0	0
S. CALAN					8	23	2	11	6	59	0	0
SUB TOTAL:	4375	13677	11317	14029	10687	8126	5531	3317	9493			
CYCLOPOIDA												
CYCL. COP	193	2119	7749	11022	6126	3353	1983	1982	4768	20355	0	
C. B. THO	1284	1043	471		16	8	20	36	288	2603	0	0
C. SCUTIF	18	6	4						2	30	0	0
C. VERNAL		15	27	18	8	10	13		13	59	0	0
M. EDAX	<1	45	41	139	118	45			55	325	0	0
T. P. MEX	47	8	14	27		7	15	16	14	59	0	0
SUB TOTAL:	1543	3236	8306	11206	6267	3423	2031	2034	5140			
NAUFLI I I												
NAUFLI I I	16129	41665	2983	3659	3327	974	155	90	8308	71952	0	0
SUB TOTAL:	16129	41665	2983	3659	3327	974	155	90	8308			
TOTAL	22059	58735	25018	31217	22397	14037	8030	5498	24186			

TABLE 63

JERRY LAKE LAKE ZOOPLANKTON MONTHLY SUMMARY - ABSOLUTE DENSITY (#/M³)

FROM 78 05 10 TO 78 11 22

ICE-FREE PERIOD

YEAR 1978

	MAY	JUN	JUL	AUG	SEP	OCT	NOV	MEAN	HI	LOW
CLADOCERA										
B. LONGIR	240	1063	1323	3666	2130	619	51	1407	5201	0
CH. SPHAE	4	12						2	25	0
DH. CATAW	7	1						<1	10	0
DH. DUBIA								2	38	0
D. G. MEN	113	614	3158	4	943	56		995	4352	0
DH. LONG		11	4	2	1			3	66	0
DH. PULEX		4						<1	15	0
DH. RETRO									17	0
DIA. LEUC	341	1416	1618	773	2061	514	4	1029	3672	0
EUB. TUBI	12	41	2					8	74	0
H. GIBBER	54	158	59	91	22	36	4	63	246	0
L. KNOTI	<1	6	<1	<1				1	15	0
P. PEDIC								2	49	0
SIDH. CRYST		<1	30	<1	11			7	67	0
SUB TOTAL	771	3327	6195	6037	5191	1225	59	3521		

	MAY	JUN	JUL	AUG	SEP	OCT	NOV	MEAN	HI	LOW
CALANOIDA										
CHL. COP	3837	18205	13816	8643	13575	6025	844	9875	26586	0
D. MINUT	2951	1298	409	138	106	2010	9502	2002	11983	0
D. OREGON				8	3			2	34	0
E. LACUST	21	74	23	18	55	13	4	31	132	0
S. CALAN	12	61	30	36	55	76	32	45	132	0
SUB TOTAL	6821	19638	14278	8844	13793	8124	10382	11955		

	MAY	JUN	JUL	AUG	SEP	OCT	NOV	MEAN	HI	LOW
CYCLOPOPODIA										
CYCL. COP	1985	10053	13673	7266	13148	6867	5907	8825	17987	211
C. B. THO	1516	444	19	10	64	337	283	2189	0	
C. SCUTIF	11	16	<1	2				4	25	0
C. VERNAL		17	48	<1	71	4	22	202	0	
M. EDIX	66	214	71	124	69	4	82	394	0	
T. P. MEX	8	3	14	45	261	233	318	123	876	0
SUB TOTAL	3586	10748	13825	7438	13490	7239	6565	9339		

	MAY	JUN	JUL	AUG	SEP	OCT	NOV	MEAN	HI	LOW
NAUPLII										
NHPL II	34562	25586	10586	2328	720	231	12	9810	40598	0
SUB TOTAL	34562	25586	10586	2328	720	231	12	9810		
TOTAL	45739	59300	44884	24648	33194	16819	17019	34626		

TABLE 64

JERRY LAKE

LAKE ZOOPLANKTON MONTHLY SUMMARY - ABSOLUTE DENSITY (#/M³)
 FROM 79 06 06 TO 79 09 26
 ICE-FREE PERIOD
 YEAR 1979

	JUN	JUL	AUG	SEP	MEAN	HI	LOW
CLADOCERA							
B. LONGIF	11145	7866	2028	744	5299	15891	343
DA. DUBIA				21	5	72	0
D. G. MEN	755	6956	4592	355	3440	10283	78
DA. LONG	2	24			7	75	0
DA. RETRO	12				3	40	0
DA. LEUC	1618	2596	1297	912	1636	3459	539
EUB. TUBI			4	11	4	39	0
H. GIBBER	38	39	409	213	182	780	0
L. KINDTI	10	13			6	38	0
P. PEDIC				6	1	21	0
SIDA. CRYST		46	24		19	190	0
SUB TOTAL:	13580	17540	8353	2262	10602		
CALANOIDA							
CAL. COP	6262	6198	4311	3555	5076	8482	3102
D. MINUT	557	680	370	82	429	784	0
E. LACUST	54	42	65	2	42	156	0
S. CAL. CP	58	89	48	18	54	134	0
SUB TOTAL:	6931	7009	4794	3657	5601		
CYCLOPOOIDA							
CYCL. COP	17979	21595	16505	13463	17523	24052	11544
C. B. THO	117	17	21	7	37	205	0
C. SCUTIF	11				2	39	0
C. VERNAL	110	41	80	36	66	154	0
M. EDAX	211	355	187	3	196	789	0
T. P. MEX	16	21	198	84	84	402	0
SUB TOTAL:	18445	22029	16991	13593	17908		
NAUPLII							
NAUPLII	8561	7125	1894	702	4494	23065	159
SUB TOTAL:	8561	7125	1894	702	4494		
TOTAL:	47517	53702	32032	20214	38604		

TABLE 65

RED CHALK LAKE - MAIN

LAKE ZOOPLANKTON MONTHLY SUMMARY - ABSOLUTE DENSITY (#/M^3)

FROM 76 08 18 TO 76 11 04

ICE-FREE PERIOD

YEAR 1976

	AUG	SEP	OCT	NOV	MEAN	HI	LOW
CLADOCERA							
B. LONGIR	3	64	198	225	115	385	0
DA. DUBIA	804	464	314	57	440	1302	30
D. G. MEN	373	631	522	799	553	858	59
DA. LONG		97	15	40	178	0	
DA. PULEX	22	46	90	115	63	118	0
DIA. LEUC	500	612	339	39	456	680	0
H. GIBBER	21	30	30		27	118	0
P. PEDIC			6		3	30	0
SIDA CRYST	117	105	111	45	106	177	30
SUB TOTAL:	1839	1952	1708	1294	1802		
CALANOIDA							
CAL. COP	5653	5534	5201	707	5174	9319	118
D. MINUT	286	125	555	1959	417	2160	30
D. OREGON	164	118	100	86	117	266	59
E. LACUST	59	41	24	6	36	89	0
SUB TOTAL:	6162	5818	5880	2758	5743		
CYCLOPOOIDA							
CYCL. COP	2542	2455	2652	411	2443	7544	266
C. B. THO	11	32	150	177	83	178	0
C. SCUTIF	<1	16	29	6	18	59	0
T. P. MEX	22	46	53	9	43	89	0
SUB TOTAL:	2575	2548	2884	603	2586		
NAUPLII							
NAUPLII	17356	12178	12944	7411	13101	18195	6213
SUB TOTAL:	17356	12178	12944	7411	13101		
TOTAL:	27933	22495	23417	12065	23233		

TABLE 66

RED CHALK LAKE - MAIN
LAKE ZOOPLANKTON MONTHLY SUMMARY - ABSOLUTE DENSITY (#/M³)
FROM 77 04 21 TO 77 11 22
ICE-FREE PERIOD
YEAR 1977

	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	MEAN	HI	LOW
CLADOCERA											
E. LONGIR	18	31		10	58	128	49	30	43	472	0
CH. AMBIG		75	126	130	602	249	1	<1	30	0	0
CH. DUBIA	2	1034	1055	487	498	316	435	1087	663	2367	30
C. G. MEN	164		58	7	8	43	41	53	34	118	0
CH. LONG	30	39		31	46	29	26	132	38	296	0
CH. PULEX	<1	22		201	568	1466	597	70	421	2899	0
CH. LEUC		47					7	13	20	6	30
EUB. TUBI		7					28	52	10	131	473
H. GIBBER	26	218	409	141	53						0
F. PEDIC	6		31	3			6		6	59	0
SIDH CRY'S	3	261		224		315	685	153	16	234	0
EUB. LONG	66	494	819	364	57	150	113	135	300	1183	0
SUB TOTAL	316	1975	2991	1979	3086	2239	948	1482	2047		
CHALANOIDA											
CAL. COP	89	5972	8215	6137	3842	4103	1845	119	4301	10947	0
C. MINUT	9844	3203	208	191	554	204	475	1752	1287	13018	0
C. OREGON	776	312	76	192	162	42	115	49	167	792	0
E. LACUST			28	6					5	59	0
SUB TOTAL	10709	9487	6528	6526	4558	4349	2435	1920	5759		
CYCLOPODIA											
CYCL. COP	4516	9487	5835	3728	1920	2328	694	754	3687	13757	0
C. B. THO	105	88	148	293	66	176	547	1328	329	1834	0
C. SCUTIF	870	812	421	462	245	15		10	317	1331	0
M. EDAX		75	61	104	110	17	20		55	296	0
T. P. MEX	29	7	52	19	43	97	66	73	49	355	0
SUB TOTAL	5521	10469	6517	4605	2383	2632	1327	2164	4438		
NAUPLII											
NAUPLII	31734	32455	9300	16551	21499	16567	4438	7414	16502	55473	740
SUB TOTAL	31734	32455	9300	16551	21499	16567	4438	7414	16502		
TOTAL	48280	54386	27335	29662	31526	25787	9148	12979	28745		

TABLE 67

RED CHALK LAKE - MAIN LAKE ZOOPLANKTON MONTHLY SUMMARY - ABSOLUTE DENSITY (W/M²)
 FROM 78 05 11 TO 78 11 24
 ICE-FREE PERIOD
 YEAR 1978

	MAY	JUN	JUL	AUG	SEP	OCT	NOV	MERN	HI	LOW
CLADOCERA										
B. LONGIR	28	140	33	24	63	51	43	56	195	0
DA. CATAW	3	18	25	38	15	5	16	115	0	0
DA. DUBIA	41	382	531	777	520	74	2	359	1135	0
D. G. MEN	215	956	1293	1376	1836	1171	1281	1207	2975	208
DA. LONG	58	105	33	12	158	261	205	119	494	0
DA. PULEX	25	46	91	86	94	114	239	99	280	0
DA. RETRO	19	15	5	7	7	7	5	43	0	0
DIA. LEUC	15	134	606	713	1074	160	418	1827	0	0
EUB. CORE	95	168	458	14	11	18	108	10	201	0
EUB. TUBI	105	527	341	108	51	82	195	779	0	0
H. GIBBER	<1	8	22	2	<1	<1	5	822	0	0
L. KINDTI	<1	28	1	1	1	1	5	38	0	0
P. PEDIC	<1	71	99	190	94	82	35	65	0	0
SIDA CRYST	7	433	254	100	525	379	411	82	226	0
EUB. LONG	71	3349	3438	3341	4435	2334	2323	734	13	0
SUB TOTAL :	841	3349	3438	3341	4435	2334	2323	2986		
CALANOIDA										
CAL. COP	2926	5512	3439	2898	4066	1268	167	2973	8393	39
D. MINUT	299	109	99	117	43	569	1428	351	2028	0
D. OREGON	14	68	147	63	72	231	170	113	368	0
E. LACUST	14	3	3	3	17	5	6	62	0	0
SUB TOTAL :	3238	5703	3688	3082	4198	2072	1764	3443		
CYCLOPOIDA										
CYCL. COP	8431	10797	6996	4421	5411	2630	1205	5681	17306	979
C. B. THO	40	425	275	113	317	1223	1964	610	2229	25
C. SCUTIF	441	1011	634	135	78	14	123	349	1313	0
M. EDAX	48	29	124	46	94	42	2	57	227	0
T. P. MEX	27	13	71	70	56	171	162	82	247	0
SUB TOTAL :	8986	12275	8101	4785	5956	4080	3457	6779		
NAUPLII										
NAUPLII	9437	9224	23059	25707	27002	19327	9603	18360	45220	2872
SUB TOTAL :	9437	9224	23059	25707	27002	19327	9603	18360		
TOTAL :	22502	30550	38286	36315	41591	27813	17148	31570		

TABLE 68

RED CHALK LAKE - MINN
LAKE ZOOPLANKTON MONTHLY SUMMARY - ABSOLUTE DENSITY (#/M³)
FROM 79 05 08 TO 79 10 10
ICE-FREE PERIOD
YEAR 1979

	MAY	JUN	JUL	AUG	SEP	OCT	MEAN	HI	LOW
CLADOCERA									
B. LONGIR	108	101	5	18	101	2	86	65	240
CE. LACUS						8	37	3	56
DA. CATAW	2	82					18	290	0
DA. DUBIA	49	555	278	52	128	264	222	807	0
D. G. MEN	353	2144	1315	465	543	1149	1003	3136	28
DA. LONG	111	418	435	374	222	188	314	659	33
DA. PULEX	130	142	237	218	173	378	196	502	0
DA. LEUC	54	100	888	1930	593	181	718	2276	0
EUB. TUBI	169	143	24	10	90		77	303	0
H. GIBBER	246	648	404	309	121	101	334	1103	5
L. KINDTI		2	40	6	7	9	11	86	0
P. PEDIC	<1	83	2				17	124	0
STIDA CRYST	8	222	180	21	134	170	121	531	0
EUB. LONG	380	870	221	48	199	307	337	1226	17
SUB TOTAL:	1610	5510	4028	3451	2320	2670	3435		
CALANOIDA									
CHL. COP	2910	4022	3409	2765	4528	1995	3450	9322	0
D. MINUT	90	121	220	176	83	120	140	416	26
D. OREGON	32	92	130	91	93	37	87	303	0
E. LACUST	<1	13	7	<1			4	30	0
SUB TOTAL:	3032	4247	3766	3032	4704	2153	3681		
CYCLOPOIDA									
CYCL. COP	12011	11447	9031	4579	3269	2963	7544	18061	1640
C. B. THO	237	551	213	95	258	666	296	1089	0
C. SCUTIF	1082	1959	1105	206	21	46	809	2236	0
M. EDHX	9	23	73	124	95	46	66	221	0
T. P. MEX	8	9	20	8	46	17	109	0	
SUB TOTAL:	13348	13988	10441	5012	3689	3720	8733		
NAUPLII									
NHPLII	11101	15211	18306	13179	18568	13250	15337	31900	3102
SUB TOTAL:	11101	15211	18306	13179	18568	13250	15337		
TOTAL:	29091	38957	36541	24674	29280	21593	31186		

YEAR 1977

TABLE 69

	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	MEAN	HI	LOW
CHOCOCEPHALIA											
B. LONGIR.	119	220	123	303	1816	2162	2282	886	1113	4230	40
CE. FULCH								<1	2	30	0
DA. CATAW.	13	60	10	43	3	19	174	40	237	0	
DA. DUBIA	17	346	174	170	149	49	138	6	153	680	0
DA. G. MEN	609	2027	362	104	25	13	90	220	418	5385	0
DA. LONG						6	18	56	9	118	0
DA. PULEX		6	21	3	10			10	7	59	0
DA. LEUC		16	118	277	107	13	23	<1	82	533	0
EUB. TUBI		7	33	30	32	9	86	68	36	177	0
H. GIBBER	934	3131	1398	578	94	158	1459	640	1085	7041	21
L. KINDTI			<1	6				<1	30	30	0
P. HAMUL	28	4	7	7				2	30	30	0
P. PEDIC		7	14					3	30	30	0
SIDA CRYST			6	23	12			6	20	20	0
EUB. LONG	95	57	139	13				31	177	0	
SUB TOTAL :	1803	5834	2448	1523	2288	2412	4129	2059	2989		
CALYPODIA											
CAL. COP	3673	10616	22790	9143	3204	1392	937	28	7088	30769	0
D. MINUT	1479	1175	440	816	297	103	437	817	585	2396	0
D. OREGON		198	200	503	118	29	405	548	276	1360	0
E. LACUST			28	7				5	6	59	0
SUB TOTAL :	5434	11989	23456	10469	3620	1524	1779	1397	7955		
CYCLOPODIA											
CYCL. COP	27884	9820	3879	3657	2246	1071	1113	435	3537	29585	177
C. E. THO		126	111	51	2	6	1	99	54	355	0
C. SCUTIF	188	1241	1155	588	79	6	7	6	455	2100	0
M. EDAX		258	56	298	64	158	33	<1	131	651	0
O. MODEST				12	2			2	30	30	0
P. F. POP.		66	100	30	365	13	1	2	30	30	0
T. P. MEX					619	791	707	439	432	2899	0
SUB TOTAL :	2839	11546	5229	4971	3024	2034	1860	980	4614		
PHILIPPI											
NAUFLII		17163	12003	35468	31680	7319	5000	4870	16830	48372	1420
SUB TOTAL :	22558	17163	12003	35468	31680	7319	5000	4870	16830		
TOTAL	58193	46532	43127	52432	40612	13290	12768	9306	32387		

PLATHE LINE - EHSI
 PLATE ZOOPLANKTON MONTHLY SUMMARY - ABSOLUTE DENSITY (#/M³)
 FROM 78 05 11 TO 78 11 21
 ICE-FREE PERIOD
 YEAR 1978

TABLE 70

	MAY	JUN	JUL	AUG	SEP	OCT	NOV	MEAN	HI	LOW
CLADOCERA										
A	ALONI SF									
B	LONGIR	273	485	187	497	2644	1138	455	853	38
C	PULCH									
CH	SPIKE									
DA	CHAW	510	1846	1777	1710	2494	2632	3579	2089	4428
DA	OBIA	225	1395	1778	2318	1936	914	107	1351	38
D	G MEN	644	1585	720	620	453	443	751	748	332
DA	LONG	16	21	31	11	34	5	18	2116	0
DA	FILEX	<1	42	53	88	28	26	77	46	86
DA	RETRO	34	6							
DA	LEUC	17	85	223	440	312	32		174	66
EB	TUBI	663	627	63	188	150	21		232	1053
H	GIBBER	5344	7712	1867	1015	963	478	384	2471	1186
L	KNOTT	<1	2	<1	2	<1	2		<1	173
S	SIDA CYS			30					5	6
EB	LONG	13	34	15					9	66
SUB TOTAL										
	7739	13818	6736	6906	9012	5720	5378	8004		
CALANOIDA										
CHL	CUP	4969	8029	3597	3704	3984	1218	40	3736	19160
D	MINUT	151	113	237	80	28	241	492	180	779
D	OREGON	247	243	645	127	157	988	1331	513	1688
E	LAUST	18	38	12	42	3		15	18	91
S	CHAN			15					2	66
SUB TOTAL										
	5365	8424	4506	3952	4172	2448	1878	4449		
CYCLOPODIA										
CYCL	COP	15245	12156	7997	8594	2709	1136	569	6765	16442
C	B THU	282	640	80	81	22	133	191	199	476
C	SCUTIF	807	2874	1352	466	7	18	19	824	0
M	EDAN	262	284	454	266	545	226	21	309	3835
O	MODEST								909	0
P	F POP	185	152	1119	2013	1757	1314	431	3	75
T	P MEX								71	0
SUB TOTAL										
	16781	16107	11009	11443	5042	2828	1232	9173	3384	2318
PAUPLI										
PAUPLI		12226	5263	15021	23756	20142	11585	6863	15577	43315
SUB TOTAL		12226	5263	15021	33756	20142	11585	6863	15577	37204
TOTAL	42131	43611	37271	56057	38368	22581	15351	37204		

TABLE 71

RED CHALK LAKE - EAST

LAKE ZOOPLANKTON MONTHLY SUMMARY - ABSOLUTE DENSITY (#/M^3)
 FROM 79 05 08 TO 79 10 10
 ICE-FREE PERIOD
 YEAR 1979

	MAY	JUN	JUL	AUG	SEP	OCT	MEAN	HI	LOW
CLADOCERA									
B. LONGIR	968	505	138	2086	2983	3200	1470	3857	0
CE. LACUS					9	25	3	38	0
DA. CATAW	388	1303	249	781	165	152	558	2321	0
DA. DUBIA	296	1091	700	1345	392	300	759	2060	0
D. G. MEN	538	2422	551	691	303	288	874	3750	72
DA. LONG	12		24	42			15	122	0
DA. PULEX		265	546	112	89	100	206	1008	0
DA. RETRO	7	2			25		6	107	0
DIA. LEUC	14	131	479	1174	422		440	1877	0
EUB. TUBI	171	107	12	50	210	342	121	404	0
H. GIBBER	2074	4218	1217	1139	1442	1716	1985	5271	101
L. KINDTI		<1	11				2	43	0
P. PEDIC	7	2					1	35	0
SIDA CRYST		18			1	25	5	79	0
EUB. LONG	16	70					16	214	0
SUB TOTAL:	4490	10134	3927	7419	6042	6150	6463		
CALANOIDA									
CAL. COP	4363	5332	1767	4934	3888	1314	3857	8123	0
D. MINUT	41	217	344	233	55		174	623	0
D. OREGON	110	389	642	744	187	1984	533	2812	0
E. LACUST	8	62	22	7	10		21	170	0
SUB TOTAL:	4523	6000	2775	5919	4139	3298	4585		
CYCLOPOOIDA									
CYCL. COP	9914	4631	2585	961	1407	2052	3482	15714	0
C. B. THO	282	373	67	222	37		179	804	0
C. SCUTIF	1277	2810	1936	487			1218	3750	0
C. VERNAL	7	2	355				73	1573	0
E. SPERAT	9	20	24	15			13	89	0
M. EDAX	100	227	414	305	287	111	265	714	0
O. MODEST	3		5	22	2		6	46	0
T. P. MEX	294	240	345	183	231	490	272	638	38
SUB TOTAL:	11887	8303	5731	2196	1963	2654	5508		
NAUPLII									
NAUPLII	7589	6636	20377	20467	13192	4723	13437	31633	2128
SUB TOTAL:	7589	6636	20377	20467	13192	4723	13437		
TOTAL:	28488	31073	32810	36001	25337	16825	29993		

"A-LAKES" SAMPLING INTERVAL

FIGURE 1

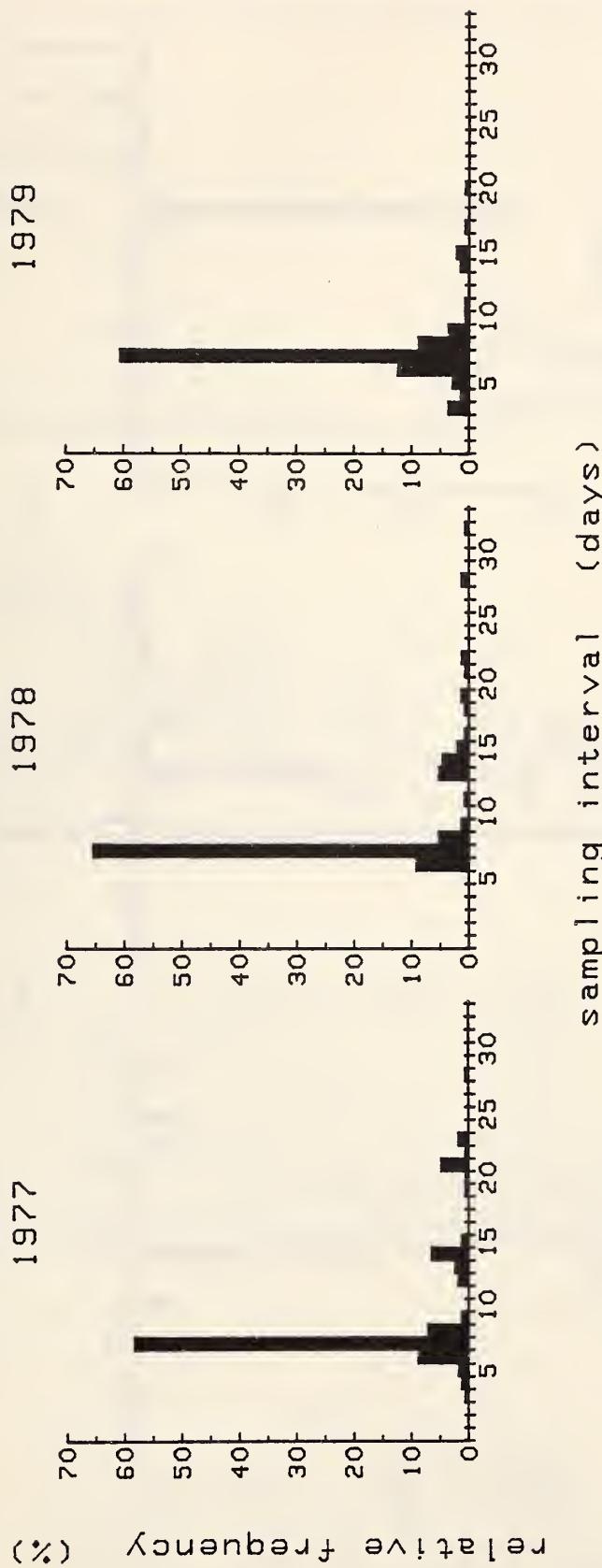


FIGURE 2

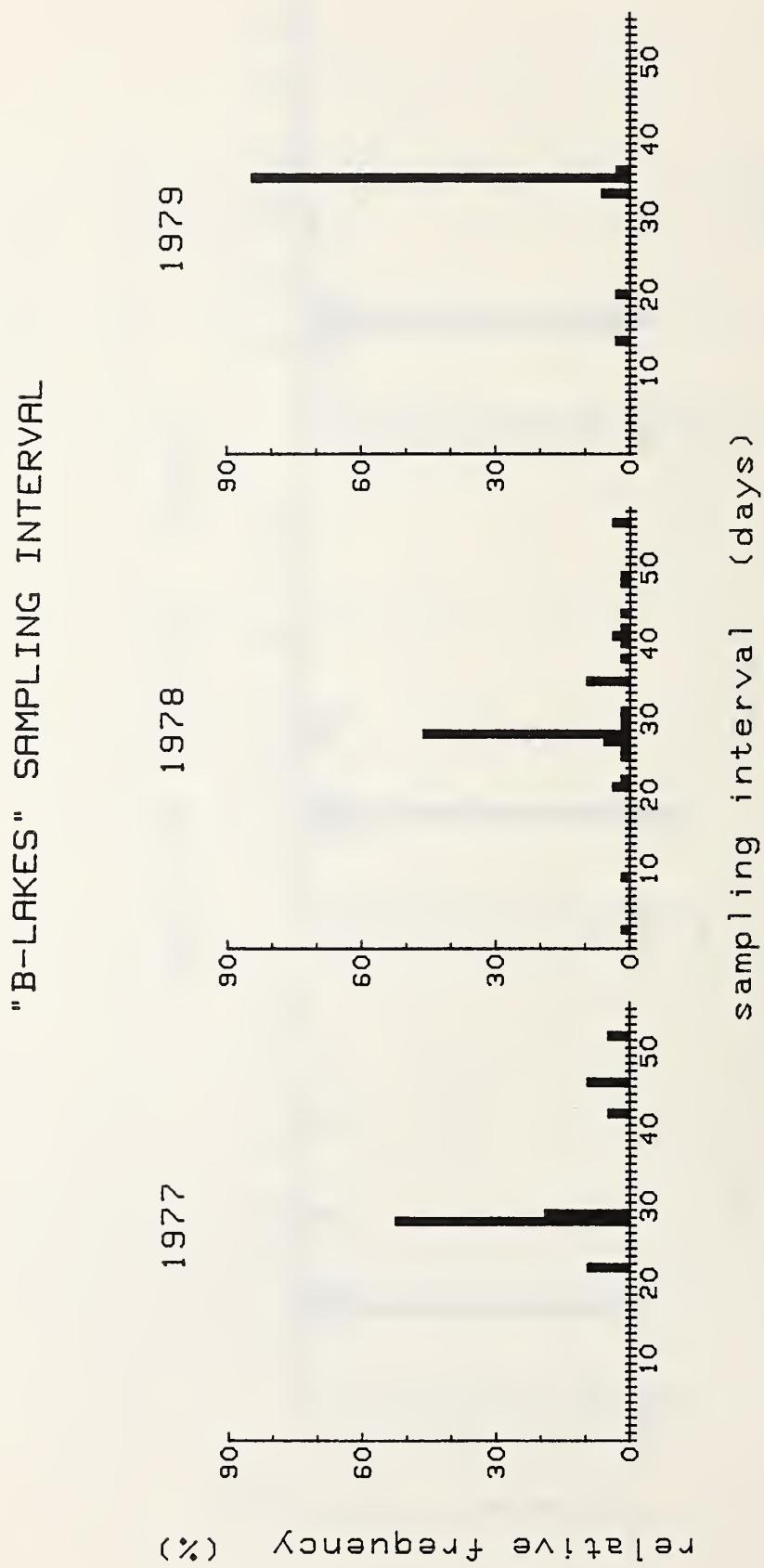


FIGURE 3

BLUE CHALK LAKE

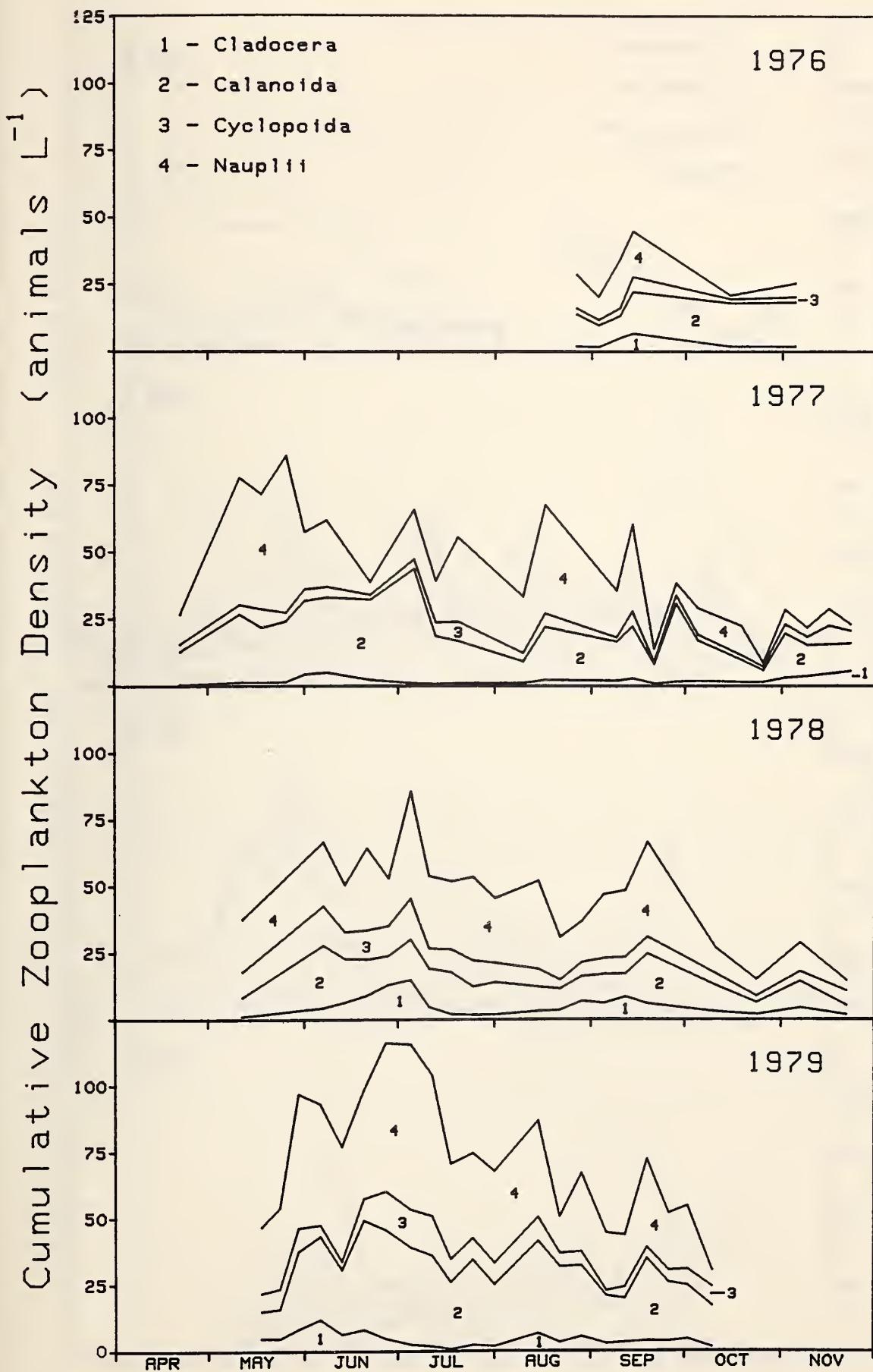


FIGURE 4

CHUB LAKE

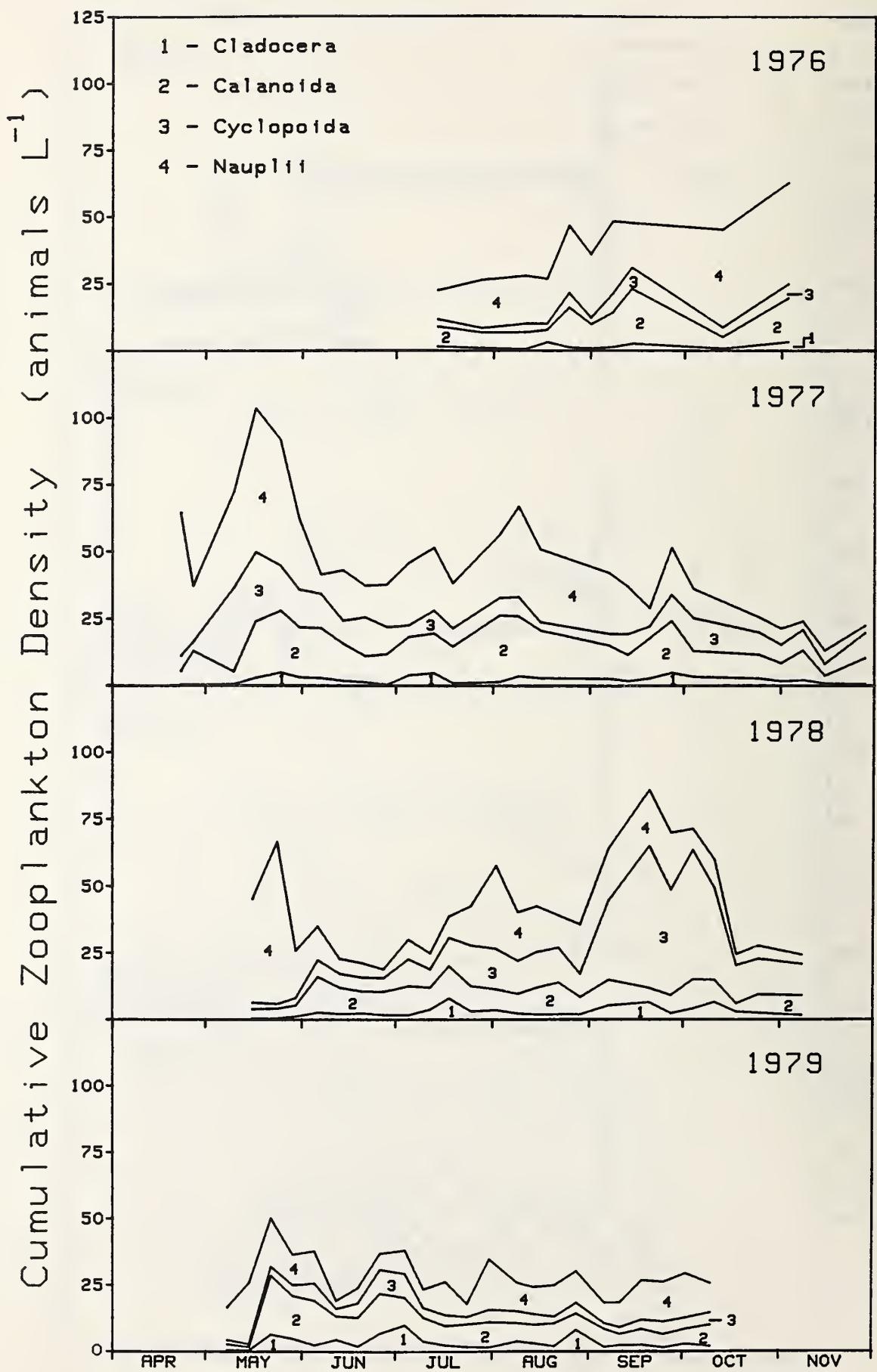


FIGURE 5

DICKIE LAKE

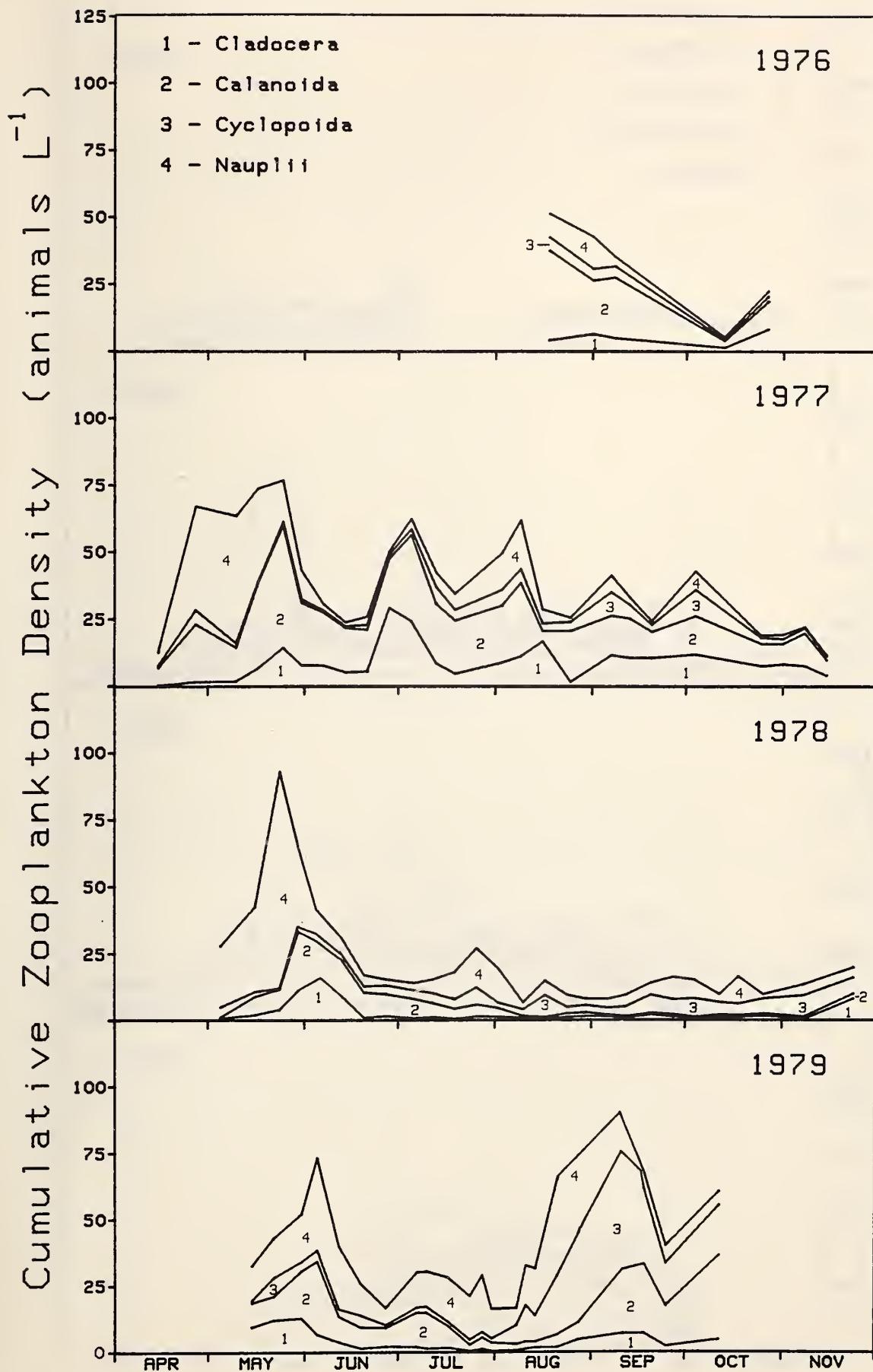


FIGURE 6

HARP LAKE

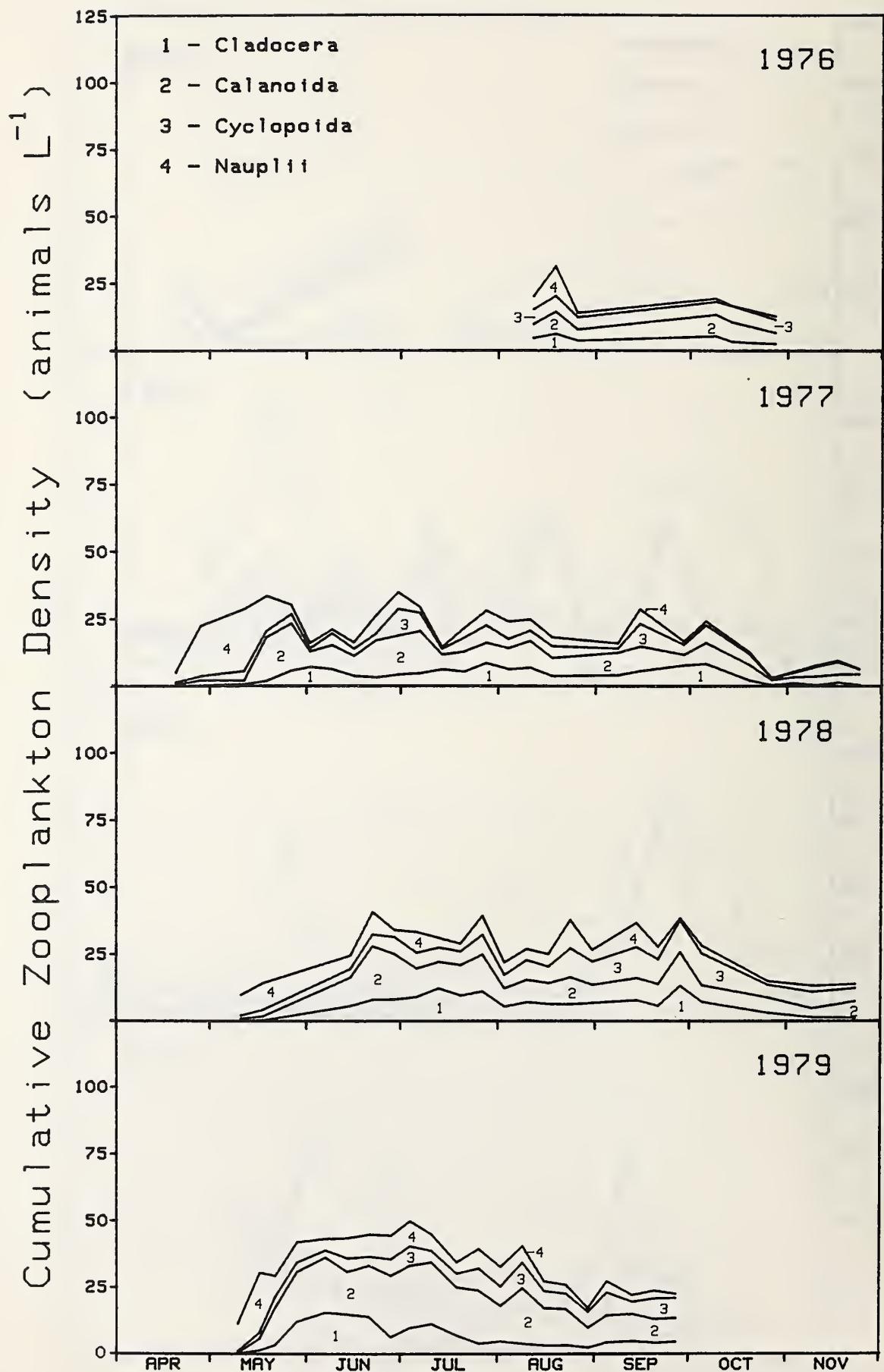


FIGURE 7

JERRY LAKE

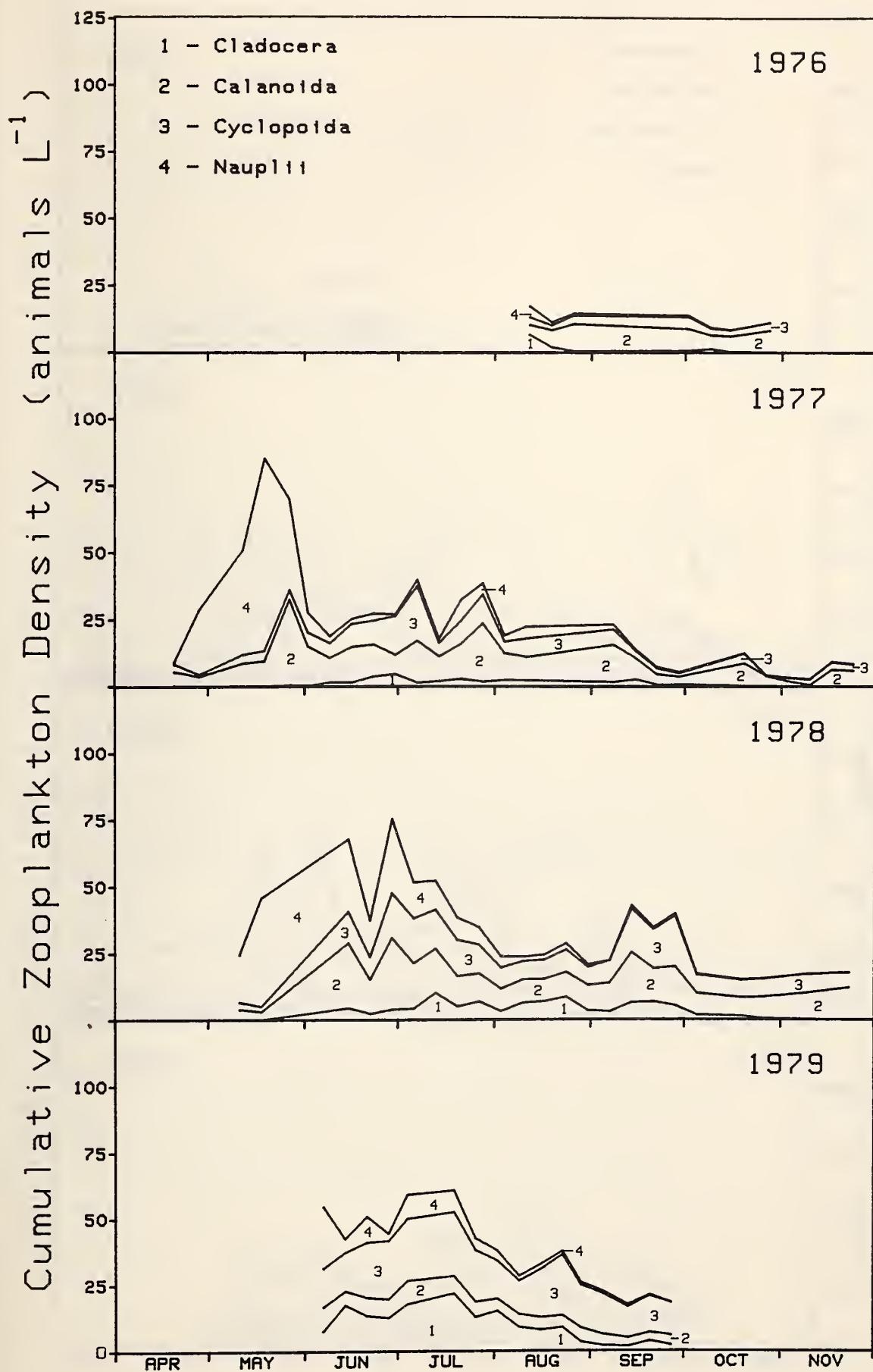


FIGURE 8

RED CHALK LAKE (main)

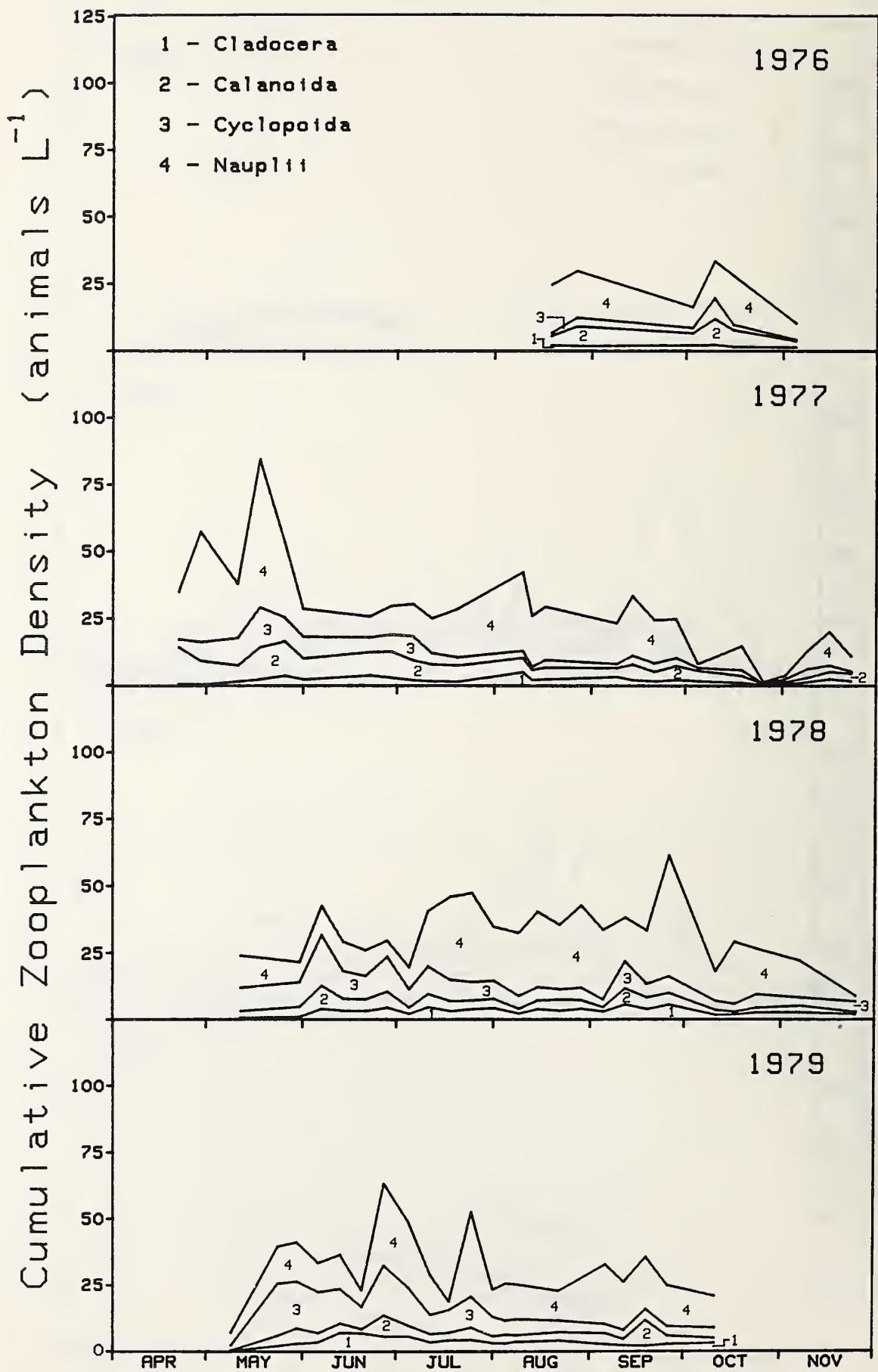


FIGURE 9

RED CHALK LAKE (east)

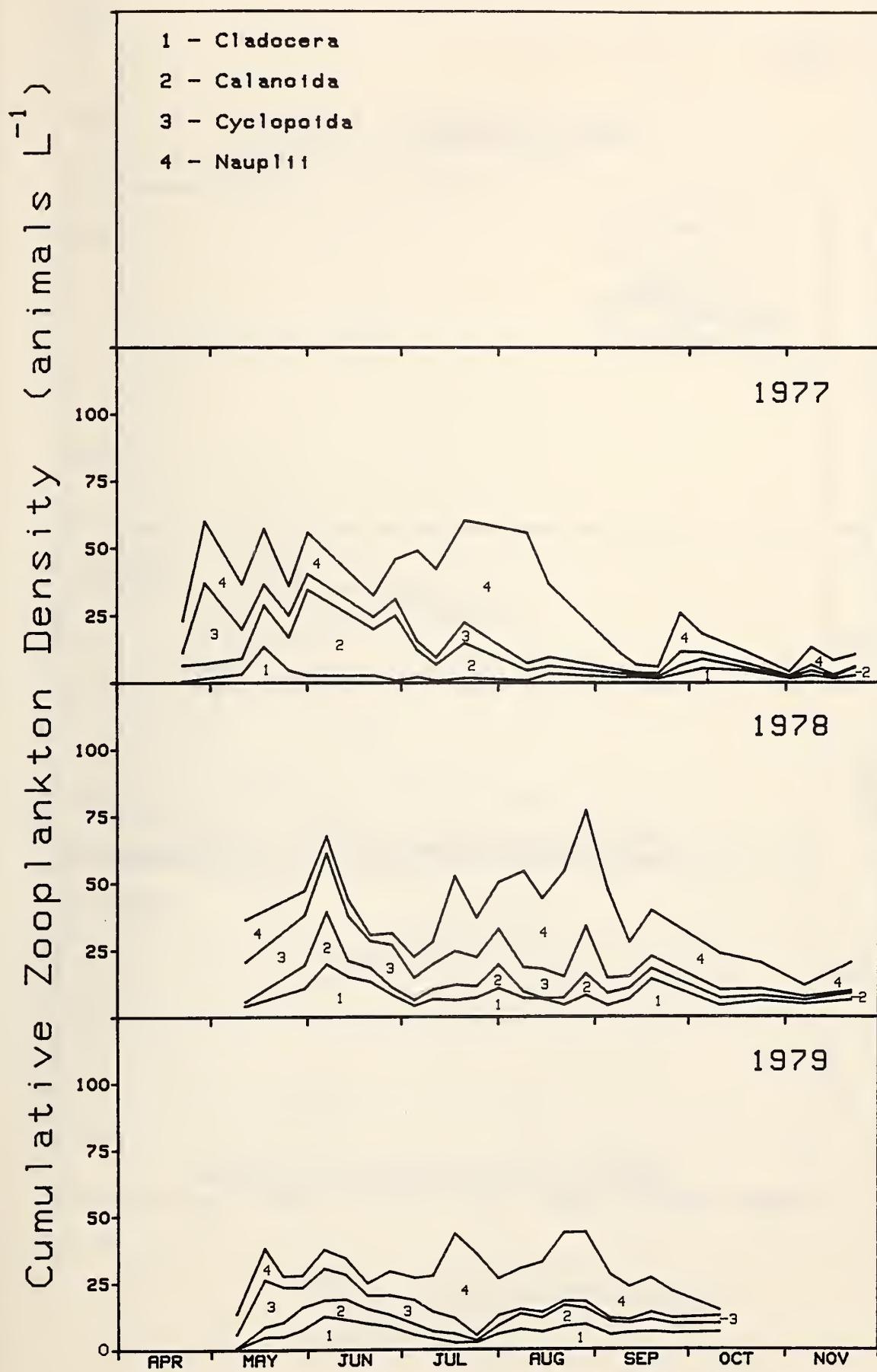


FIGURE 10

BASSHAUNT LAKE

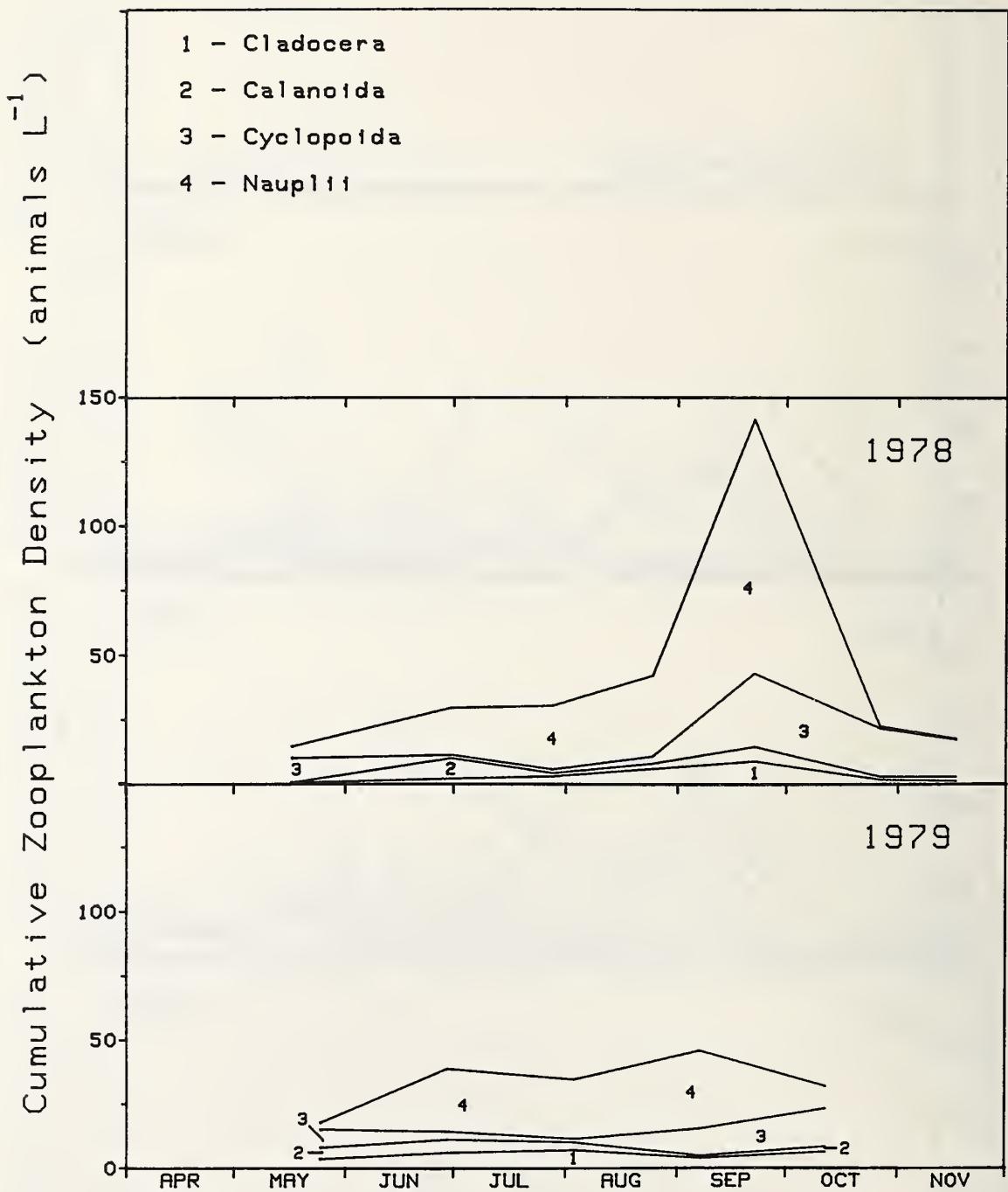


FIGURE 11

BIGWIND LAKE

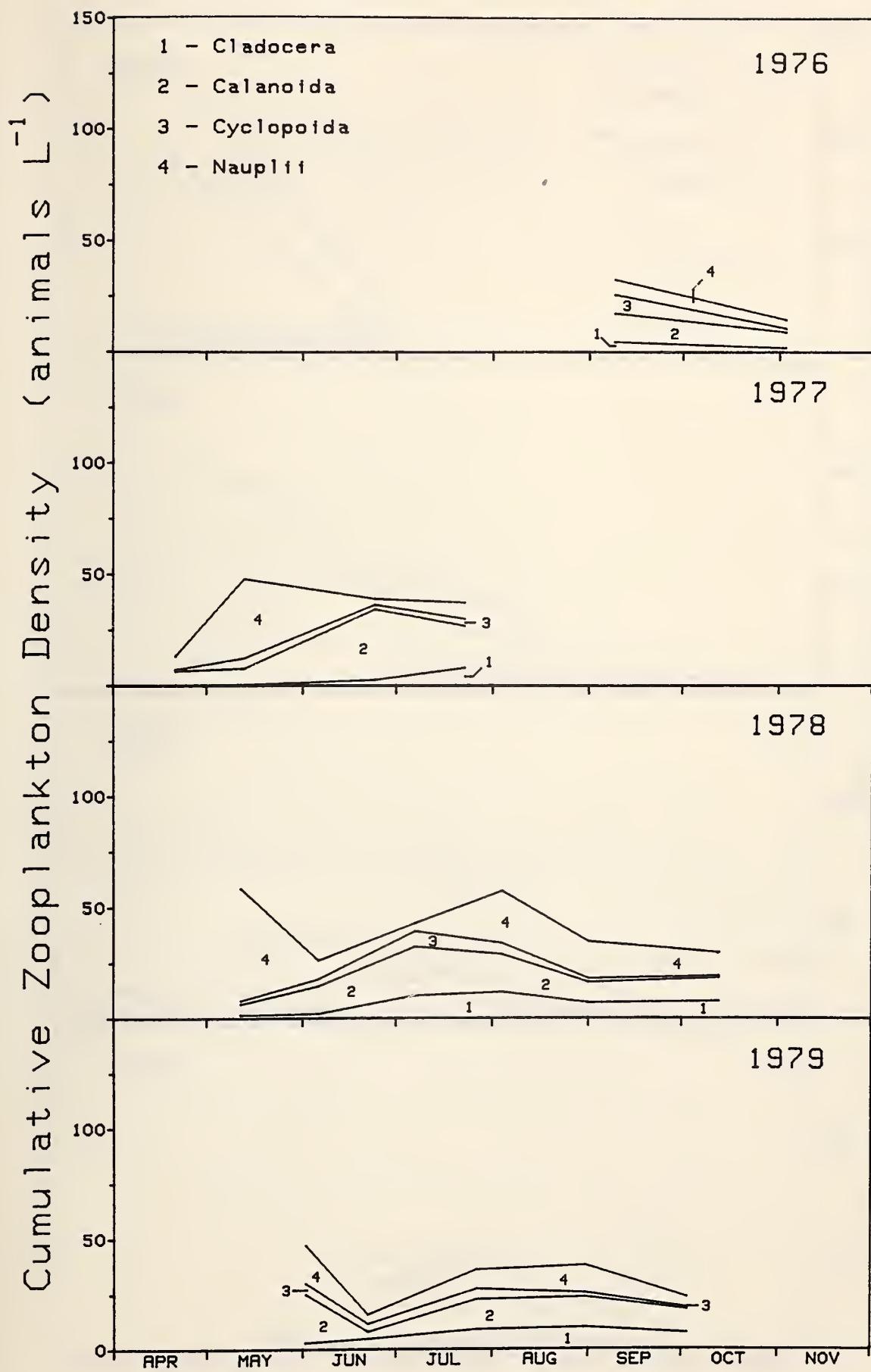


FIGURE 12

BUCK LAKE

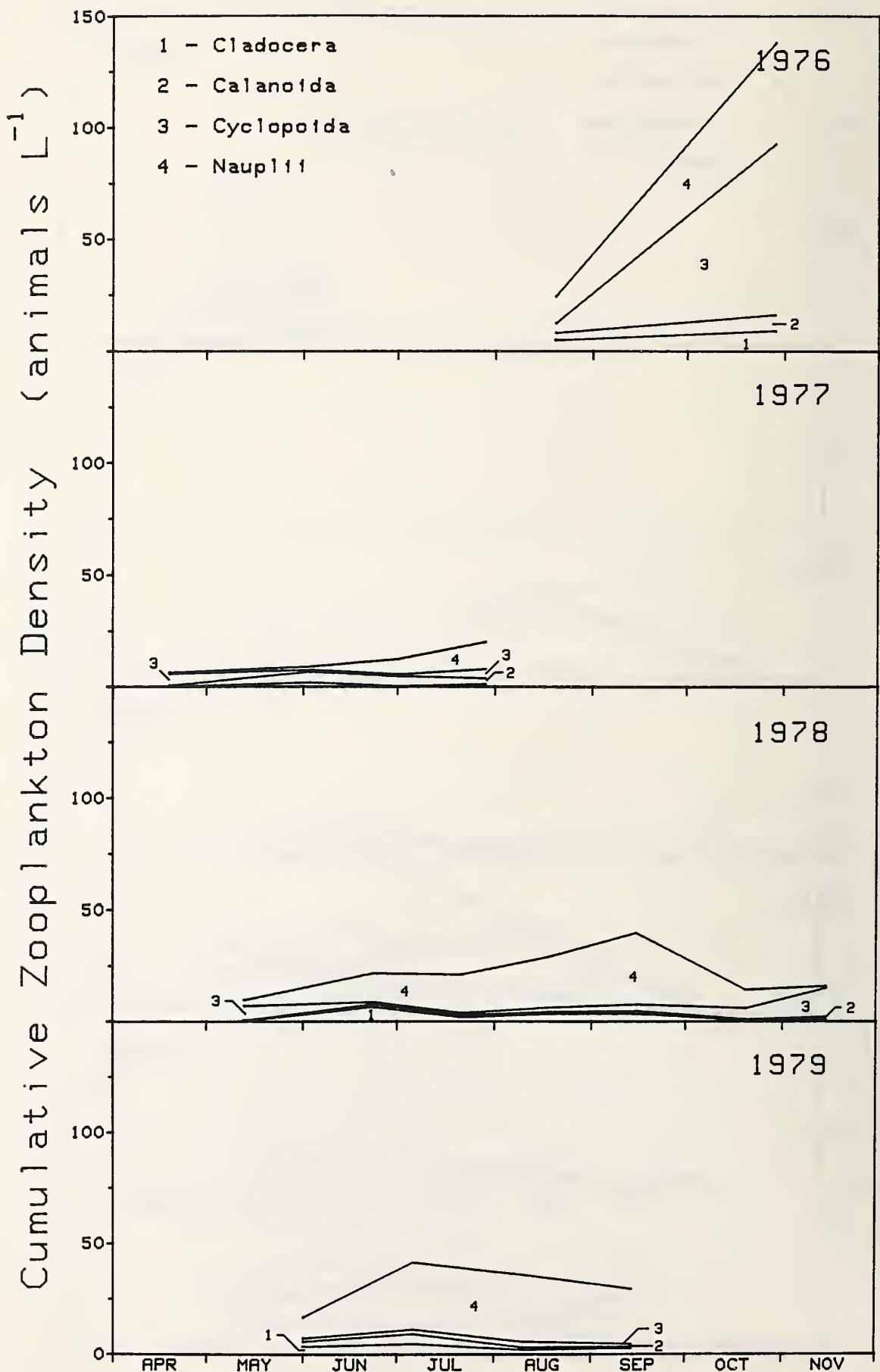


FIGURE 13

CROSSON LAKE

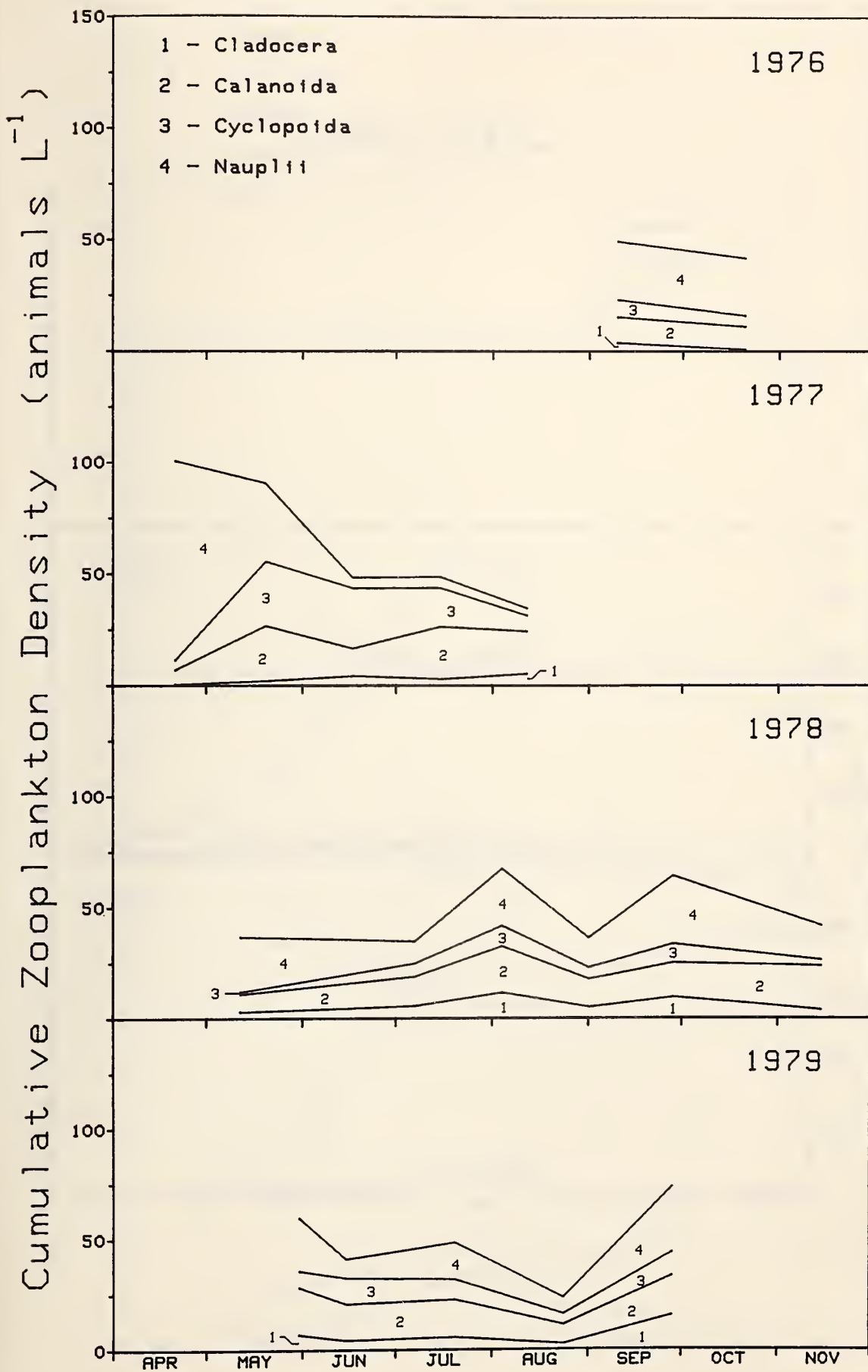


FIGURE 14

GLEN LAKE

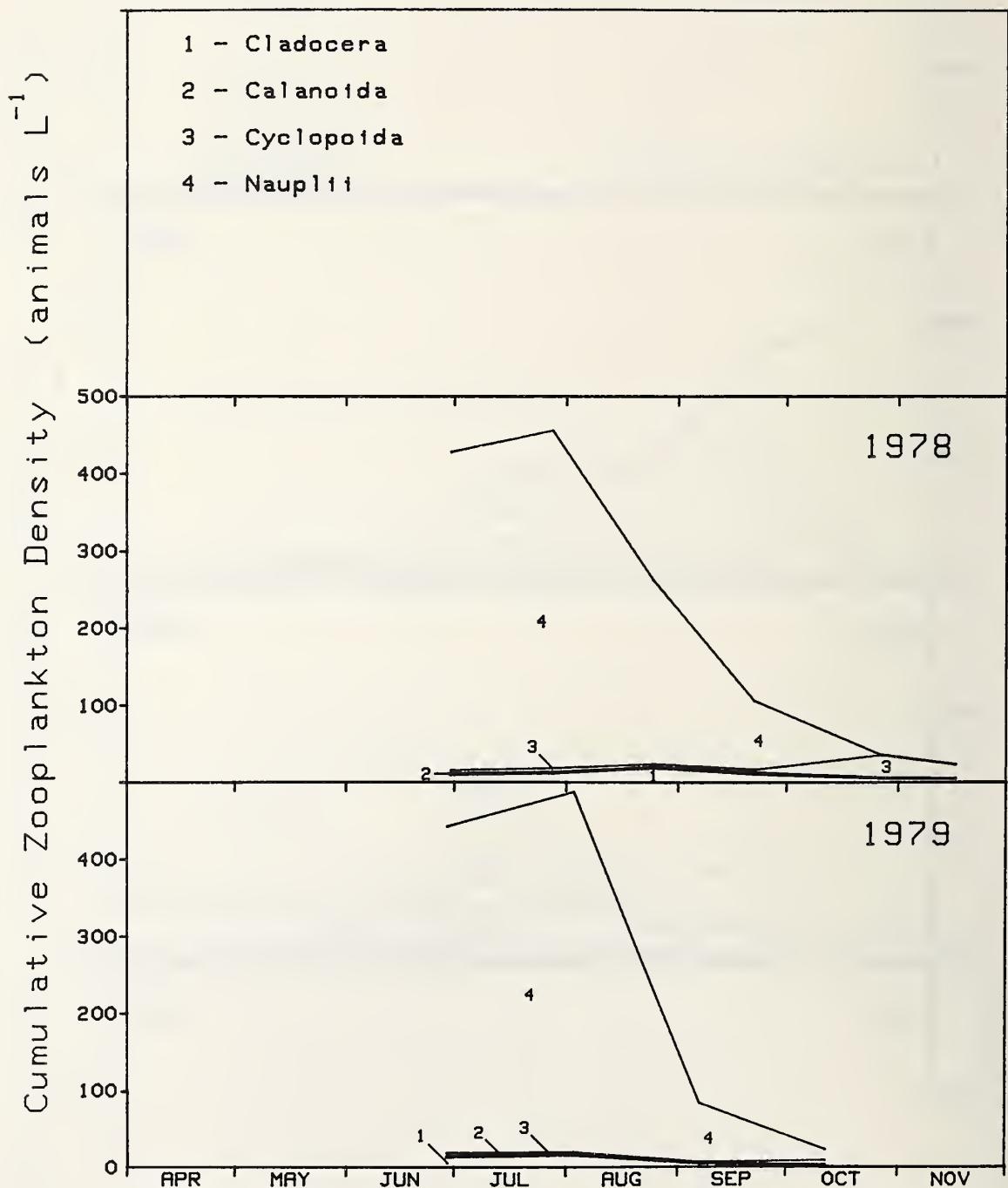


FIGURE 15

GULLFEATHER LAKE

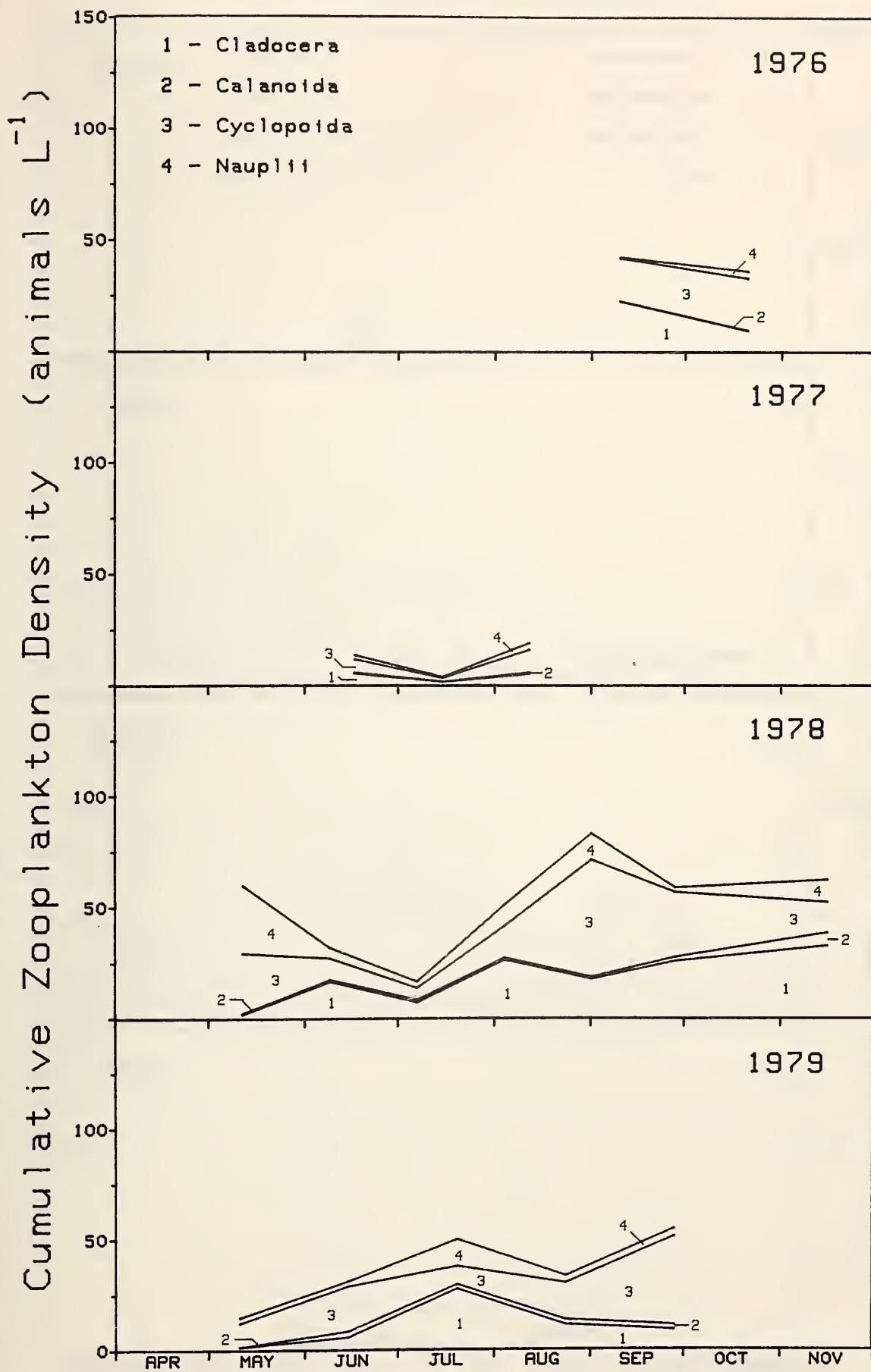


FIGURE 16

LITTLE CLEAR LAKE

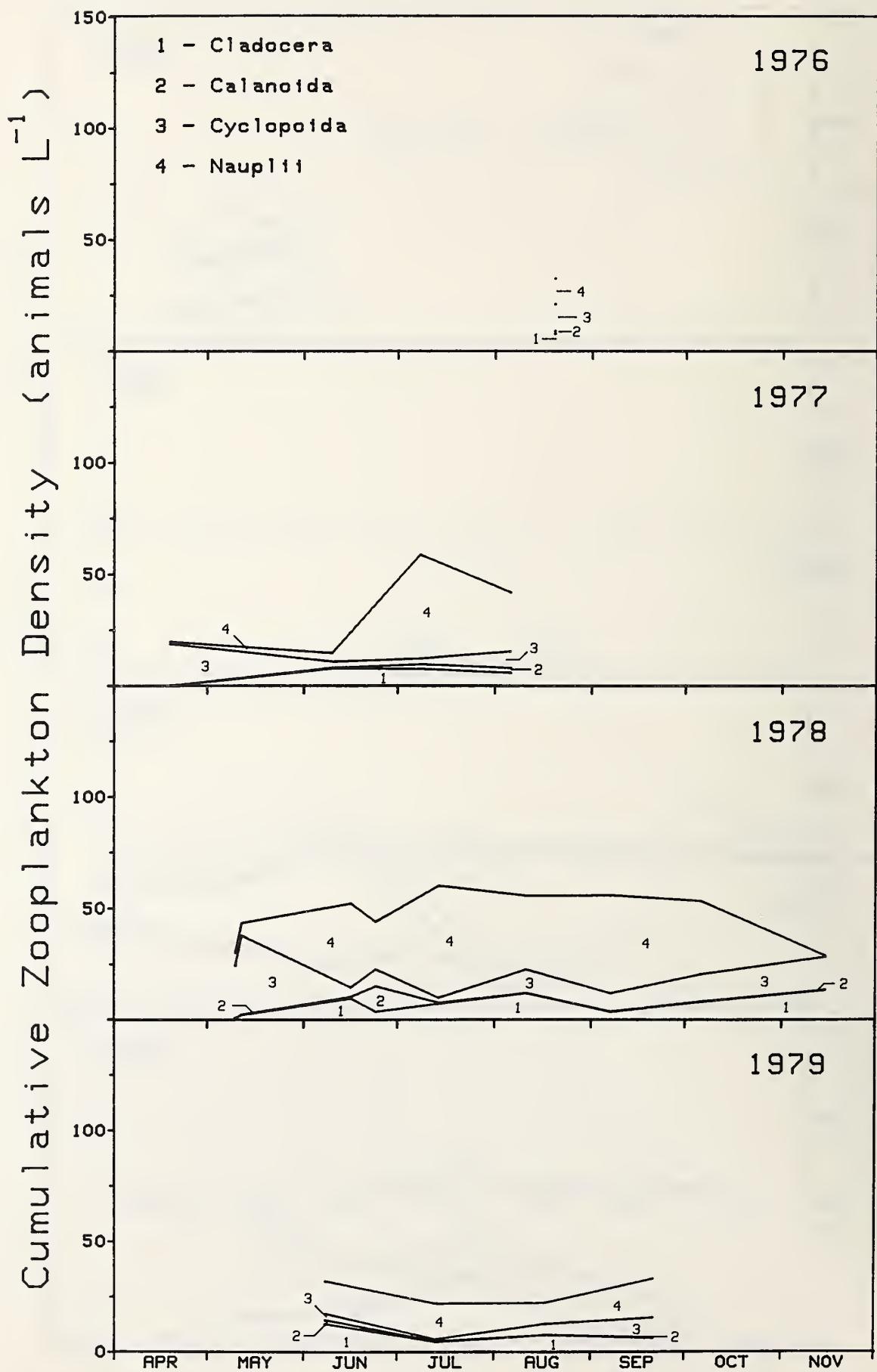


FIGURE 17

SOLITAIRE LAKE

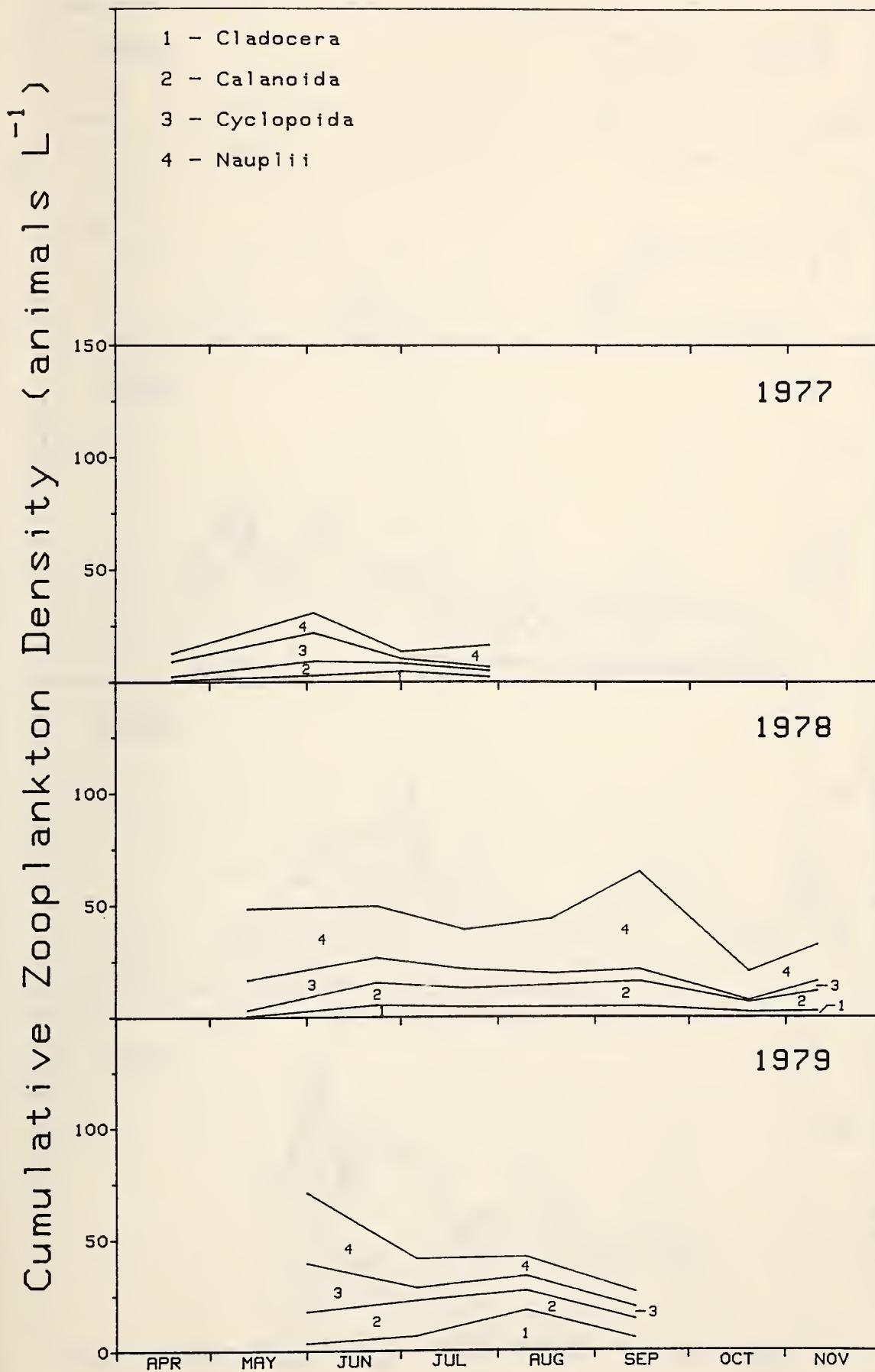


FIGURE 18

WALKER LAKE

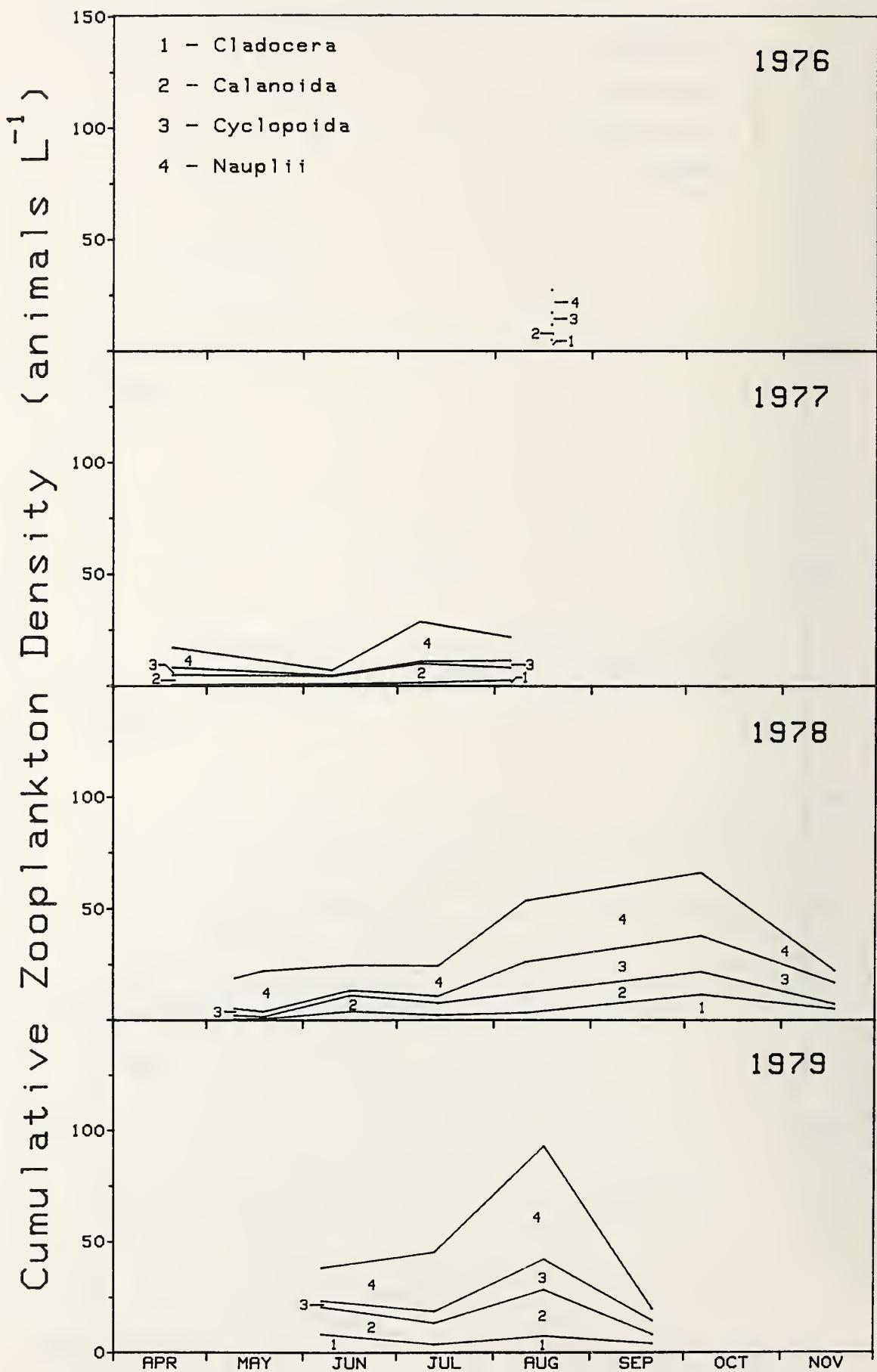


FIGURE 19

BLUE CHALK LAKE

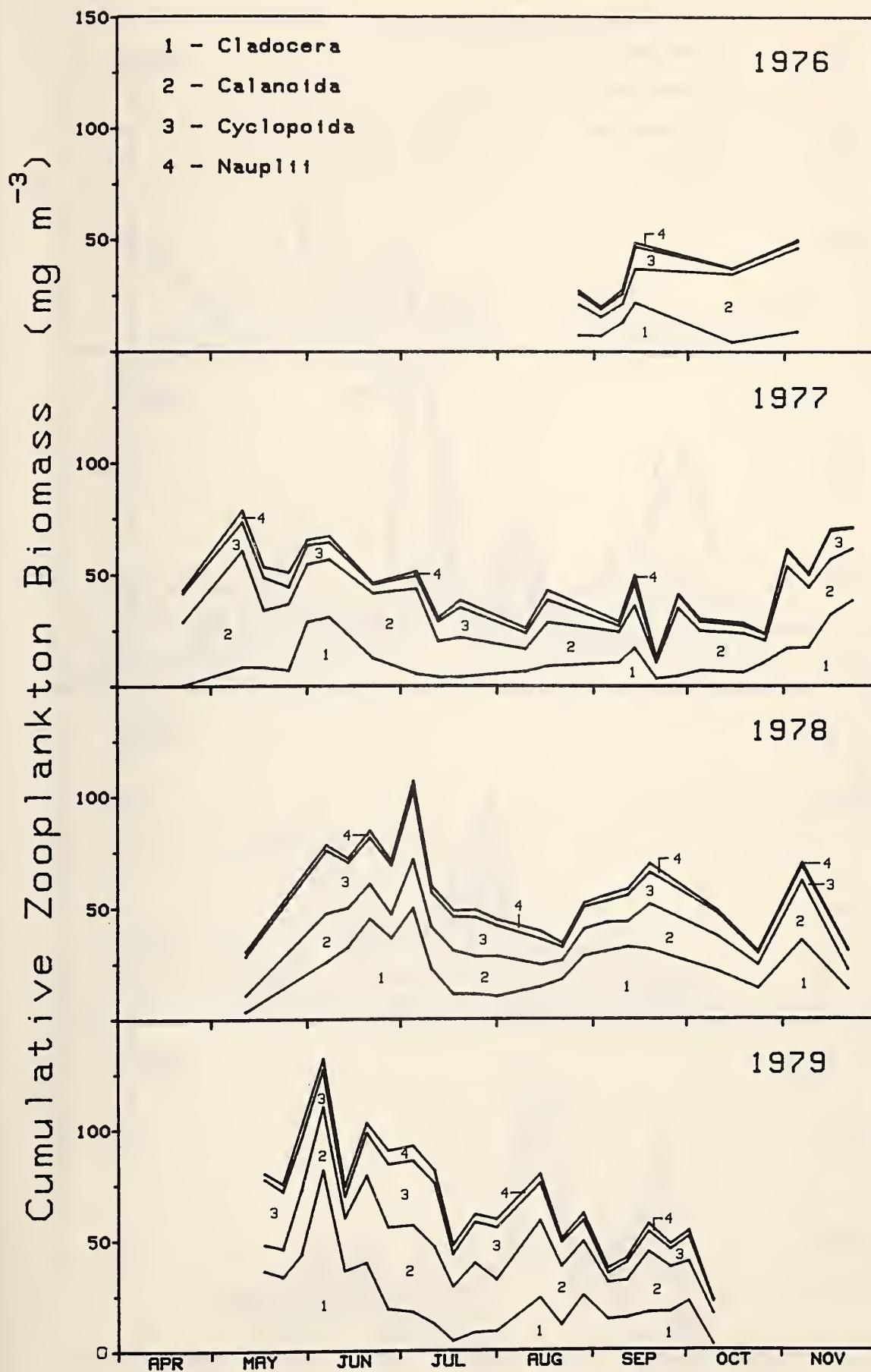


FIGURE 20

CHUB LAKE

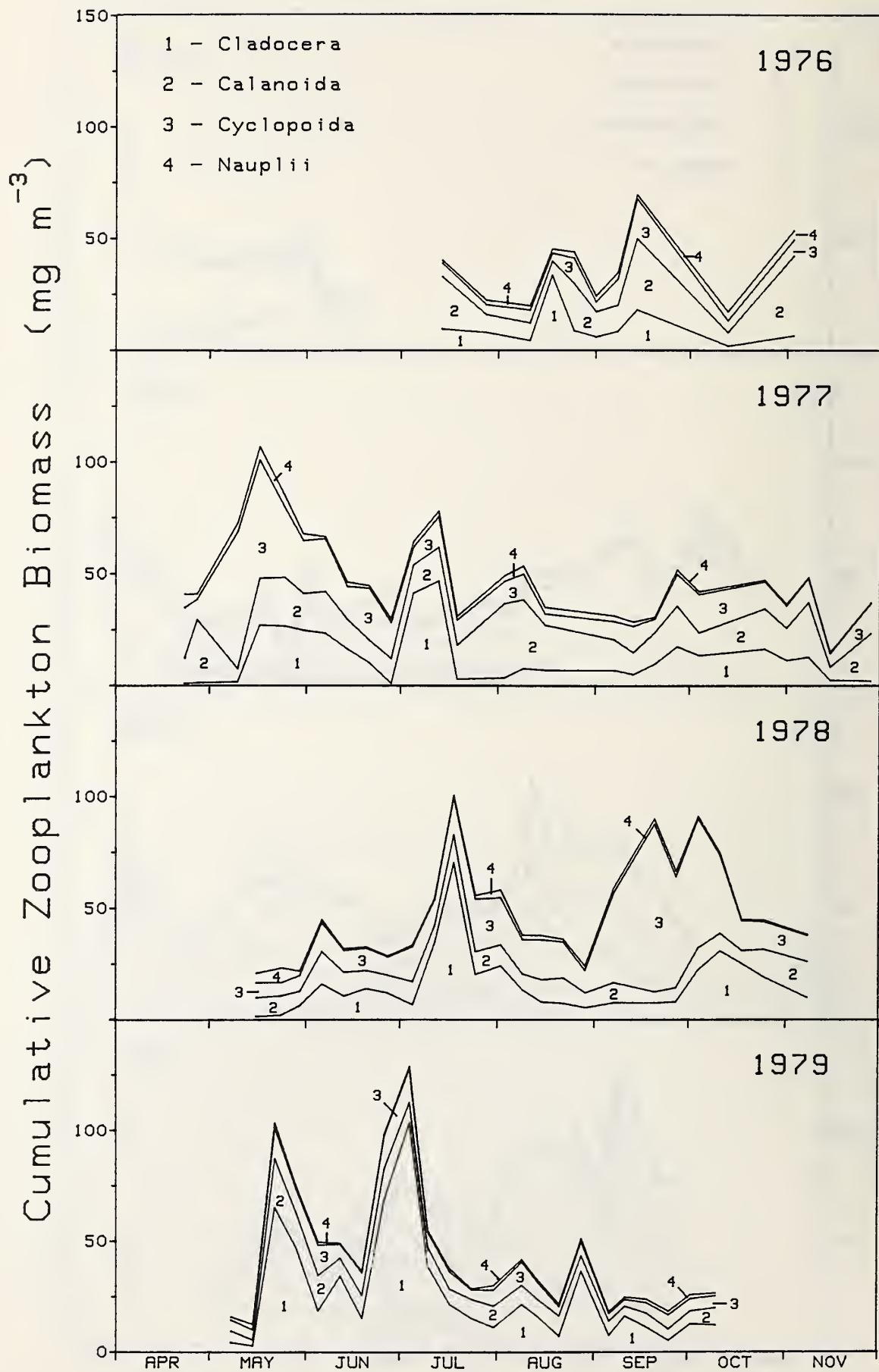


FIGURE 21

DICKIE LAKE

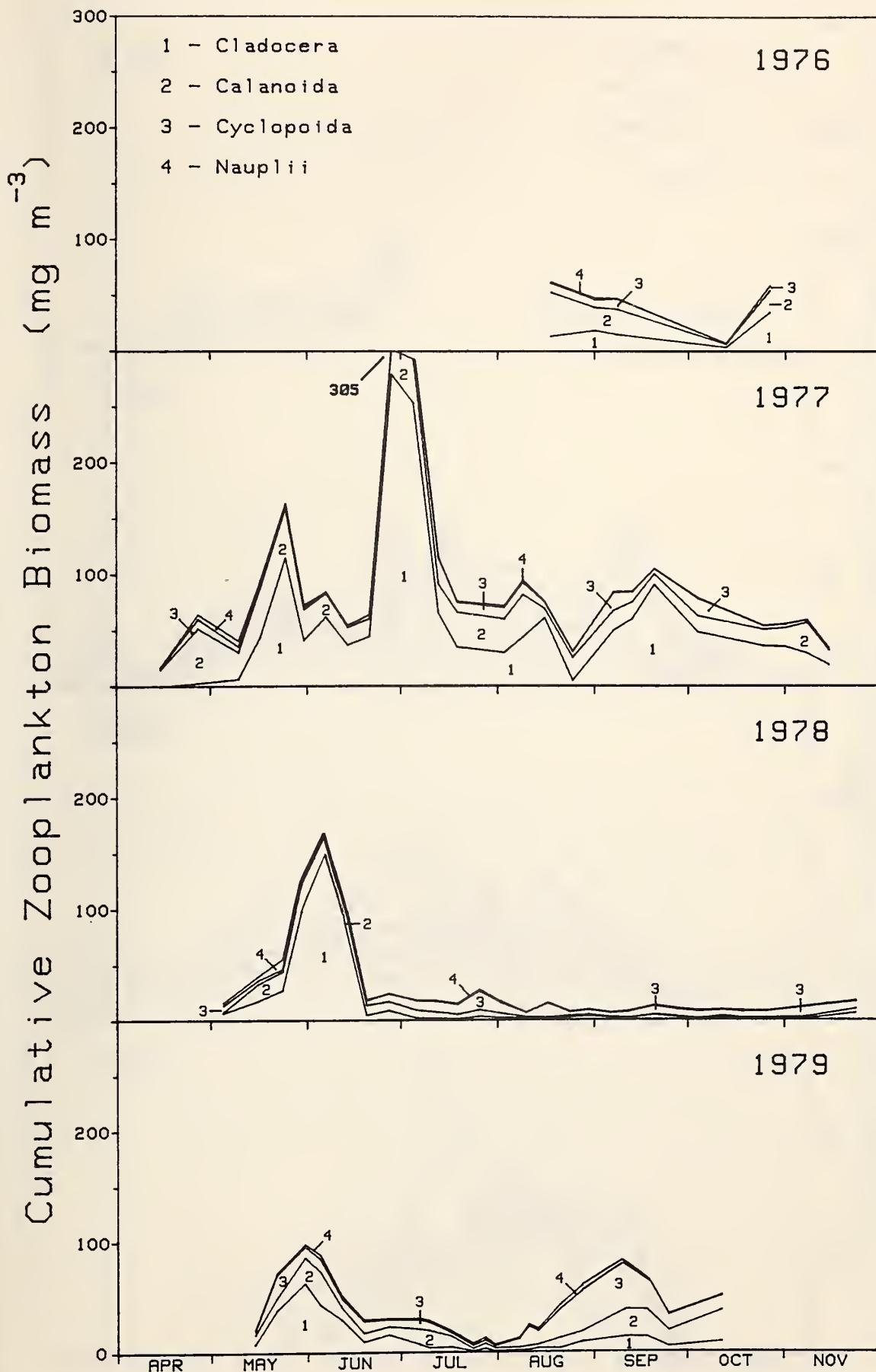


FIGURE 22

HARP LAKE

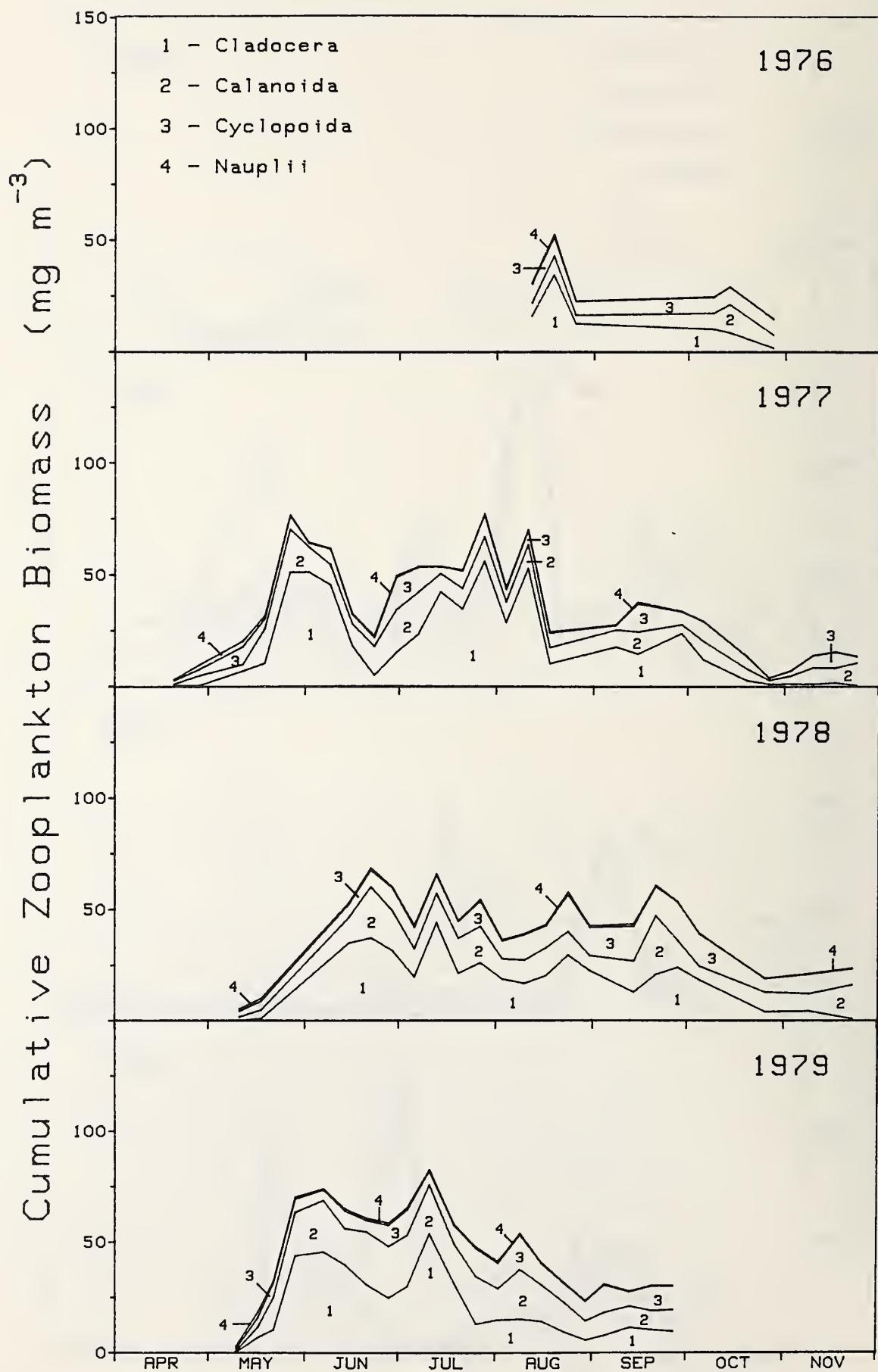


FIGURE 23

JERRY LAKE

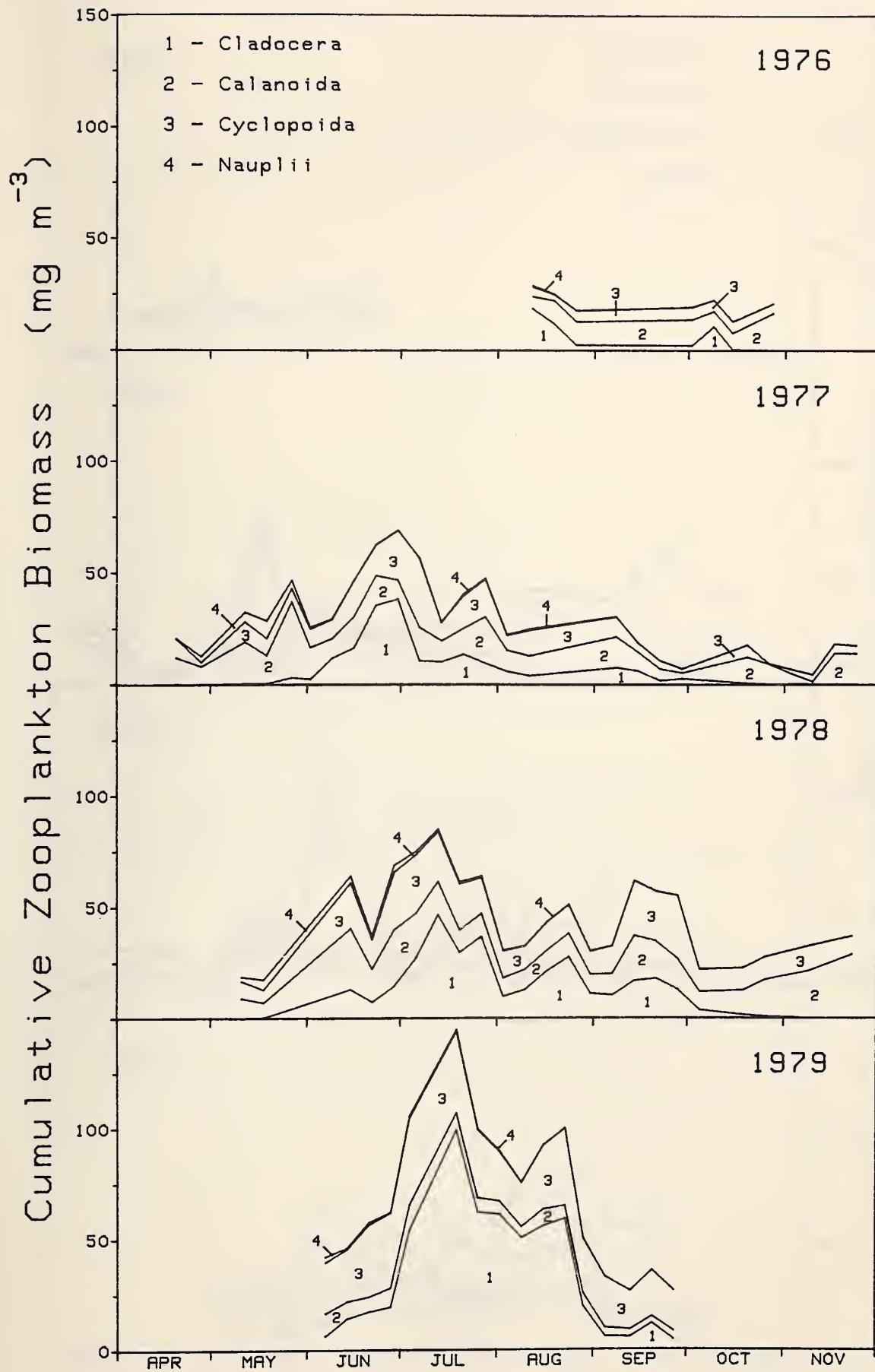


FIGURE 24

RED CHALK LAKE (main)

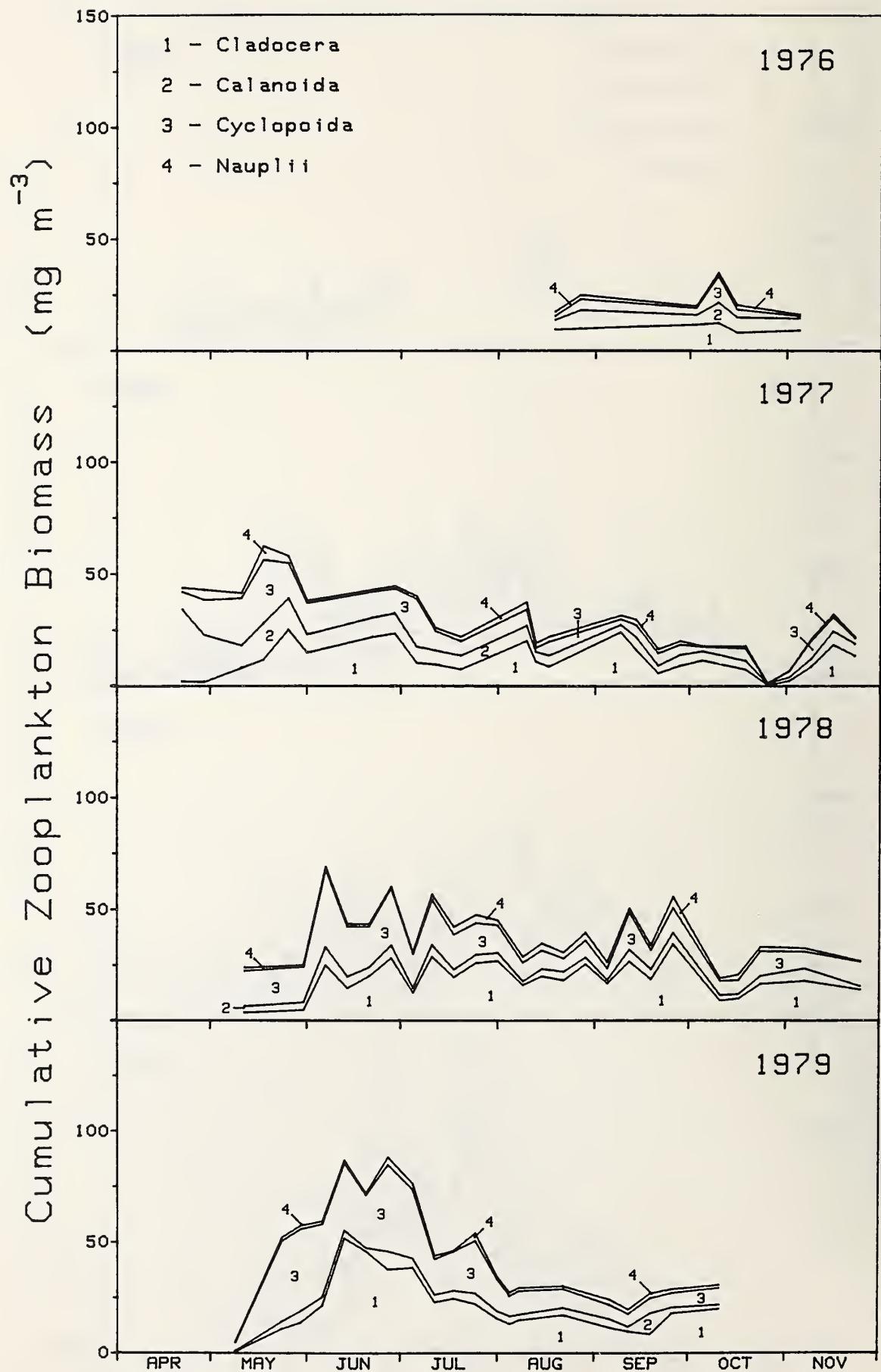


FIGURE 25

RED CHALK LAKE (east)

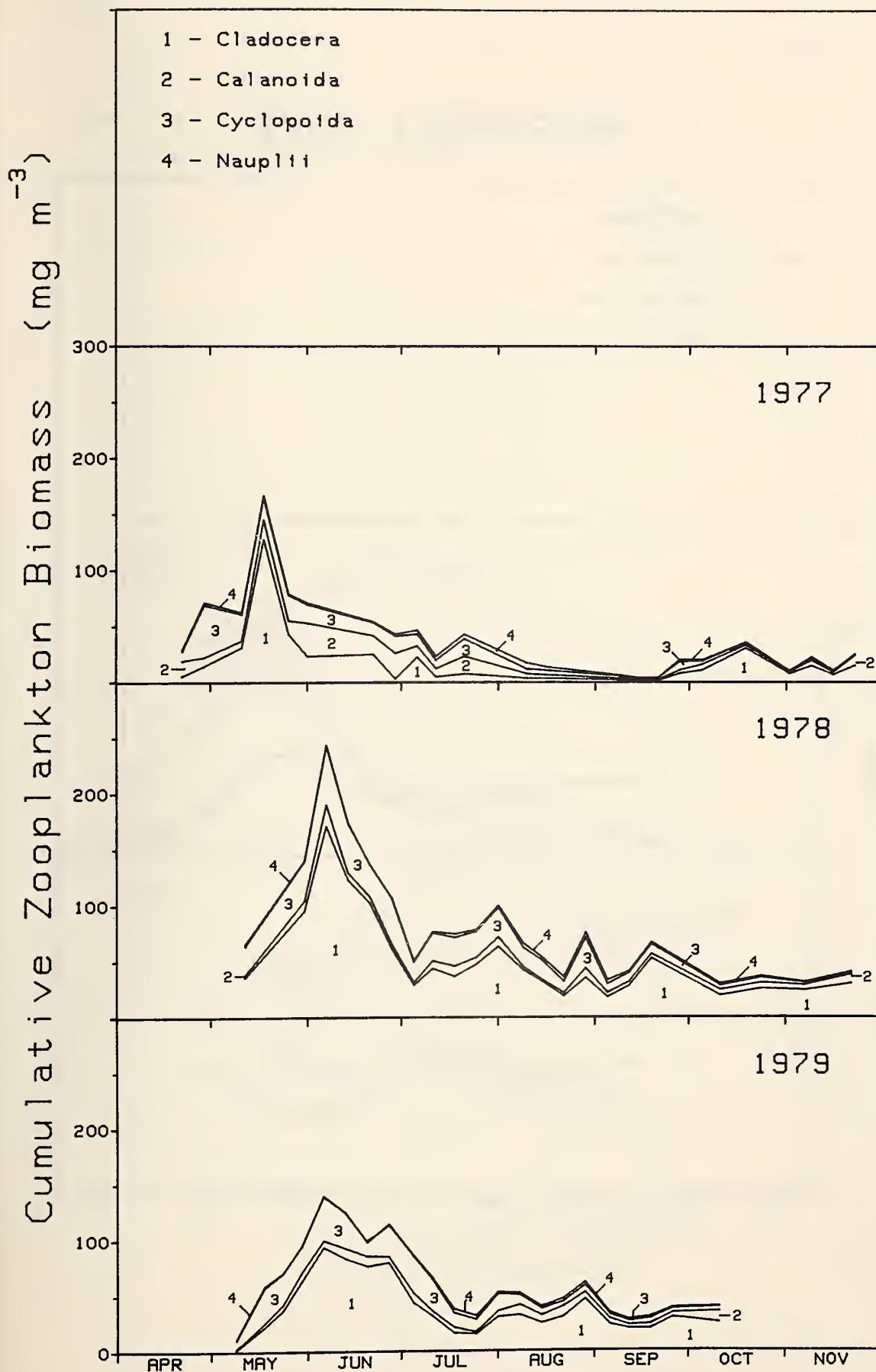


FIGURE 26

BASSHAUNT LAKE

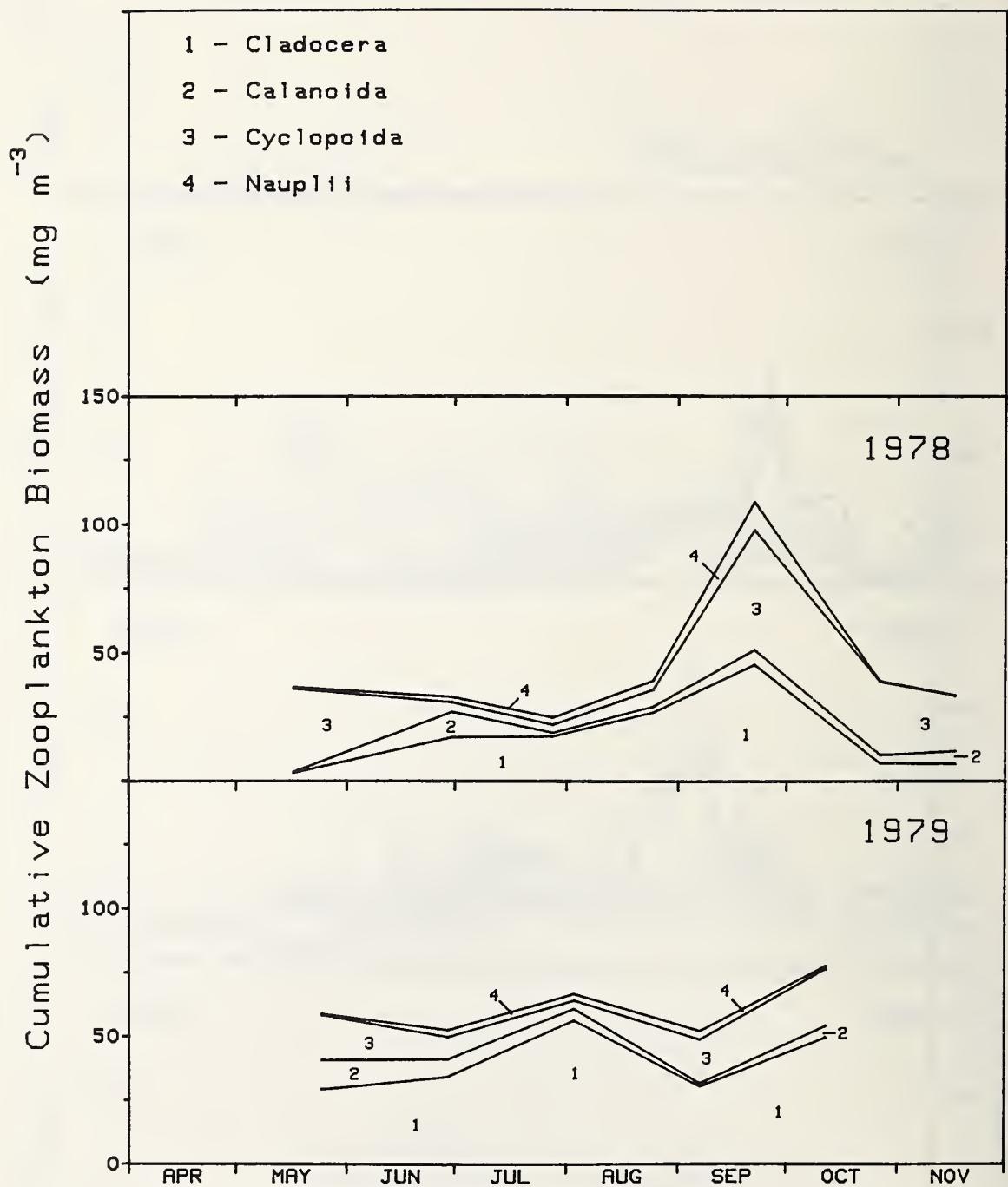


FIGURE 27

BIGWIND LAKE

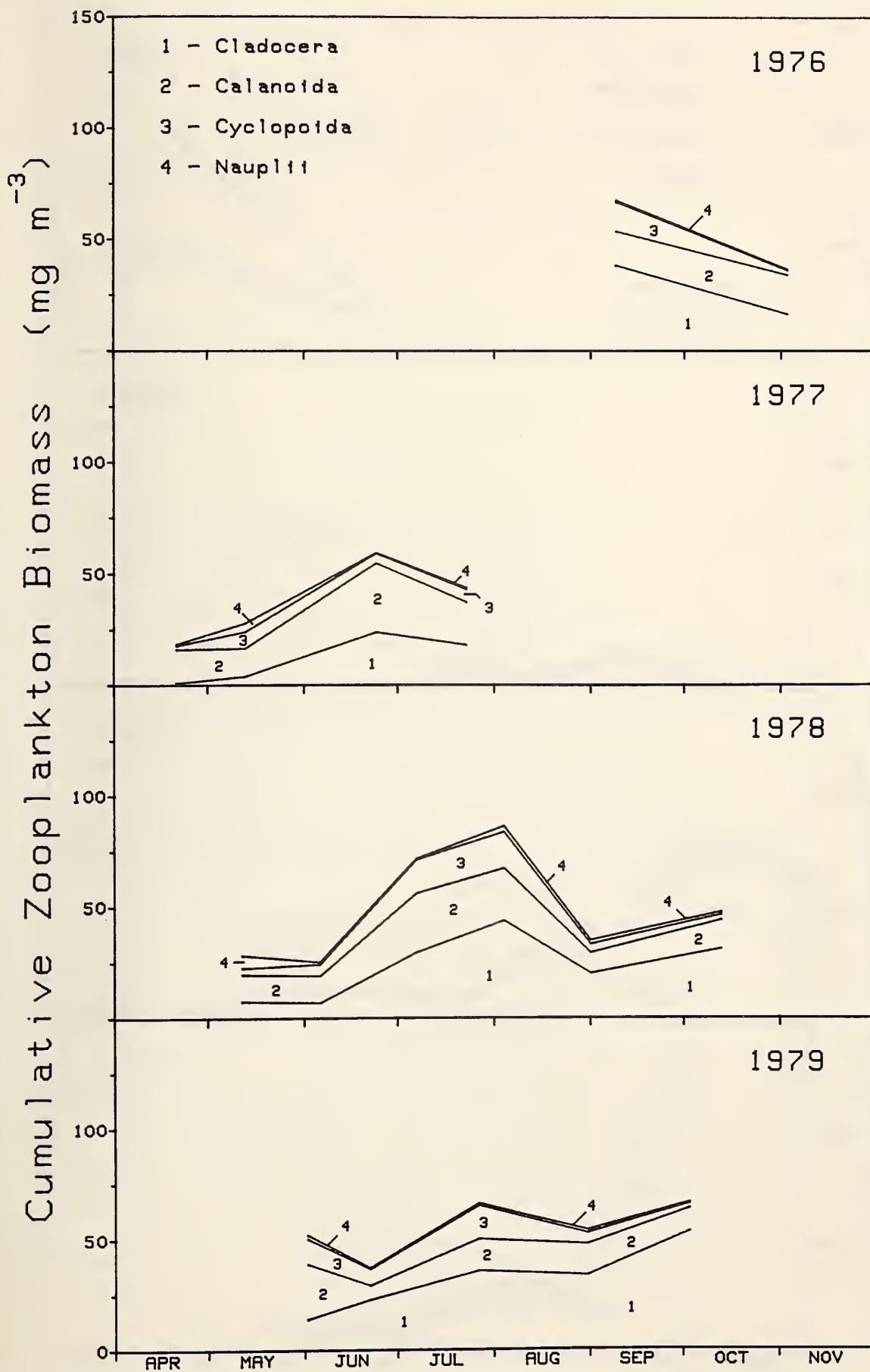


FIGURE 28

BUCK LAKE

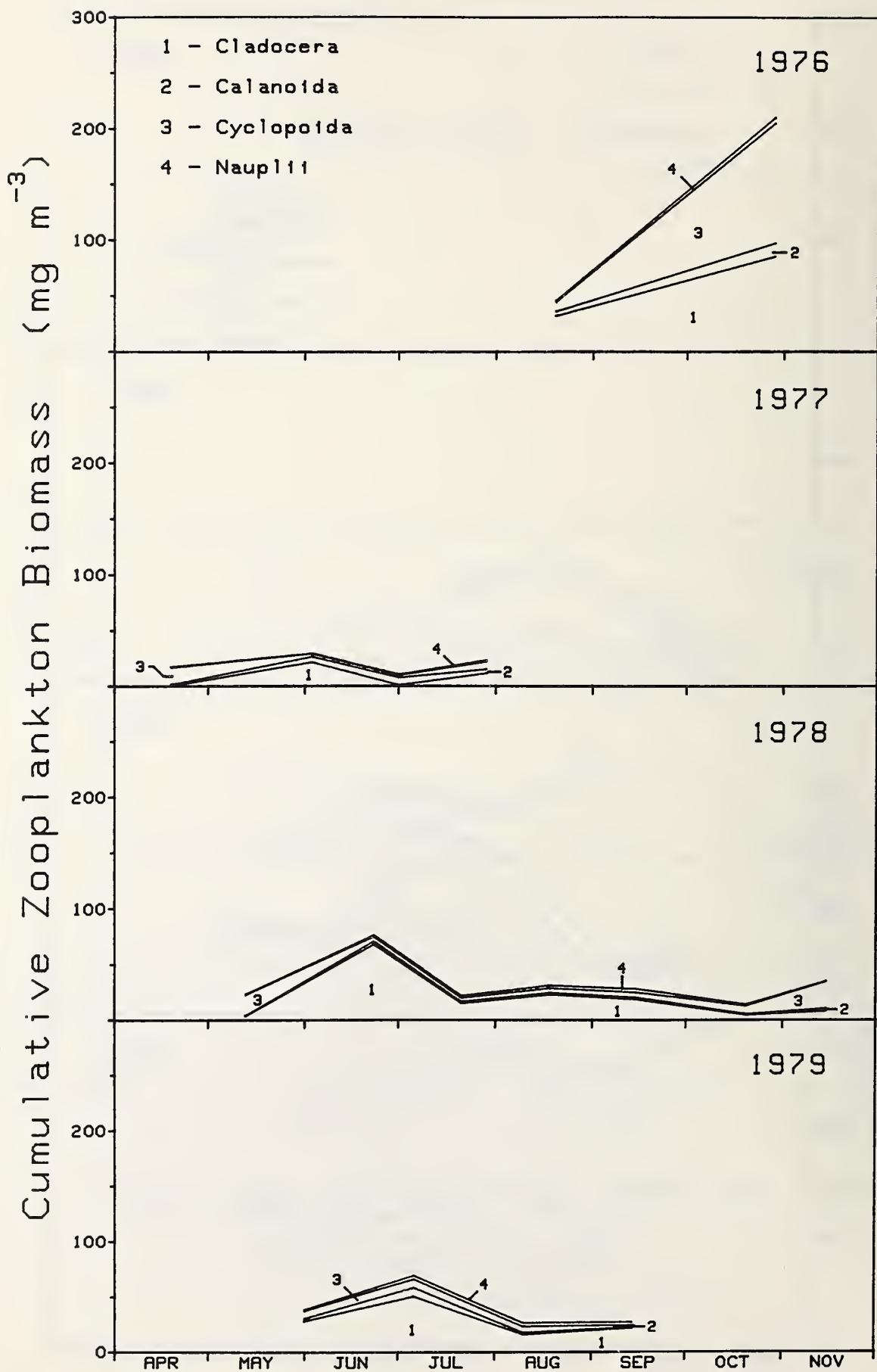


FIGURE 29

CROSSON LAKE

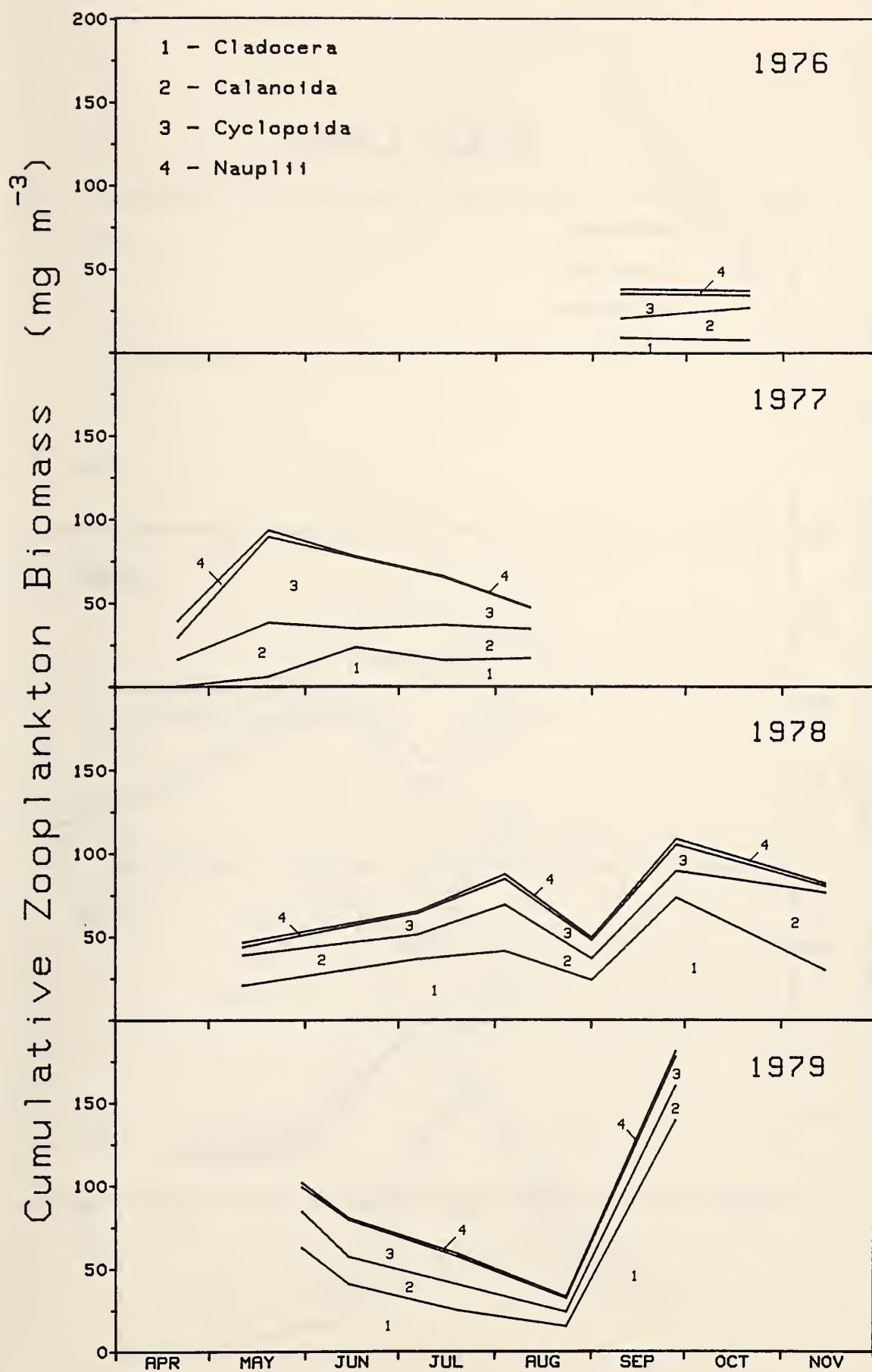


FIGURE 30

GLEN LAKE

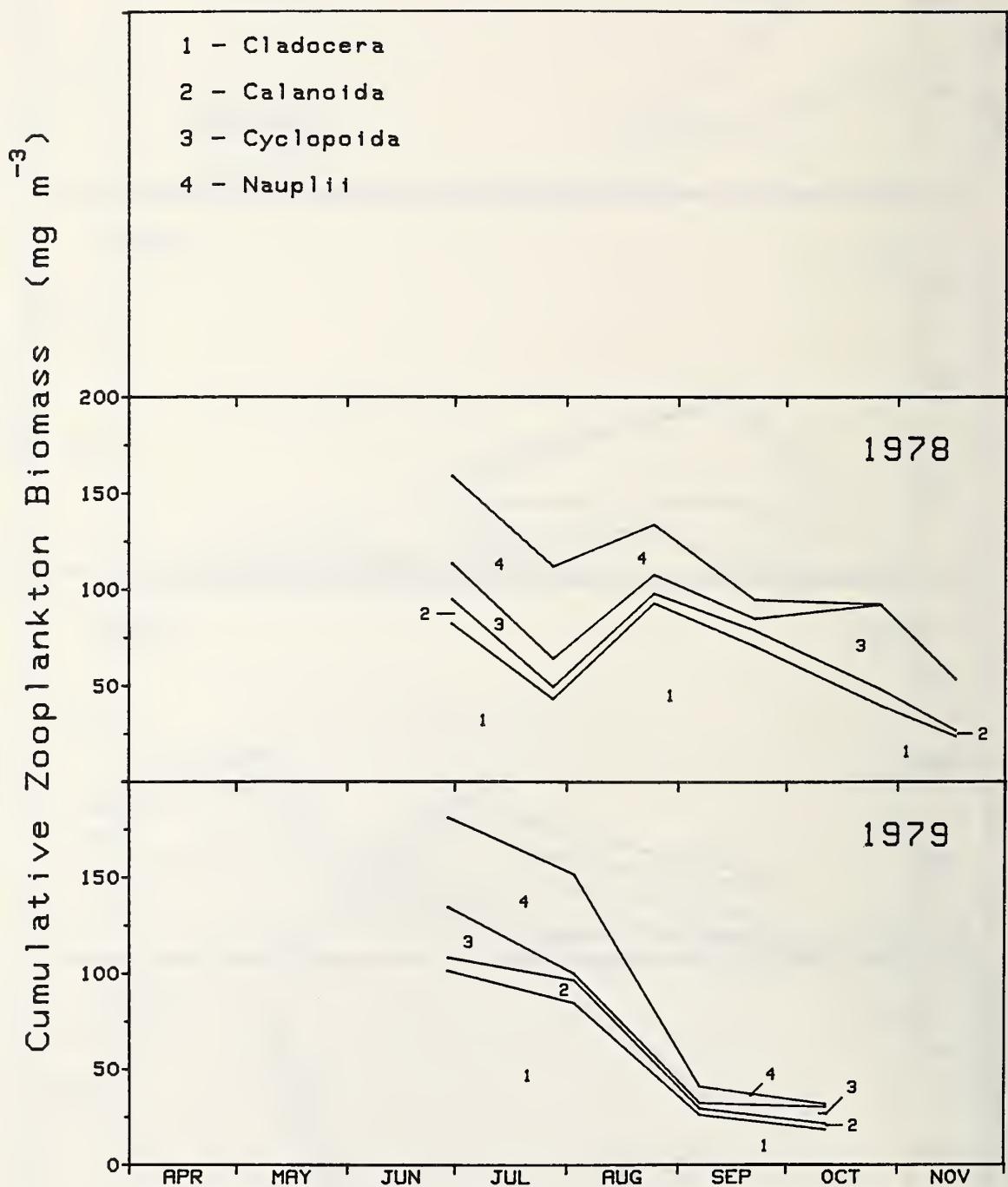


FIGURE 31

GULLFEATHER LAKE

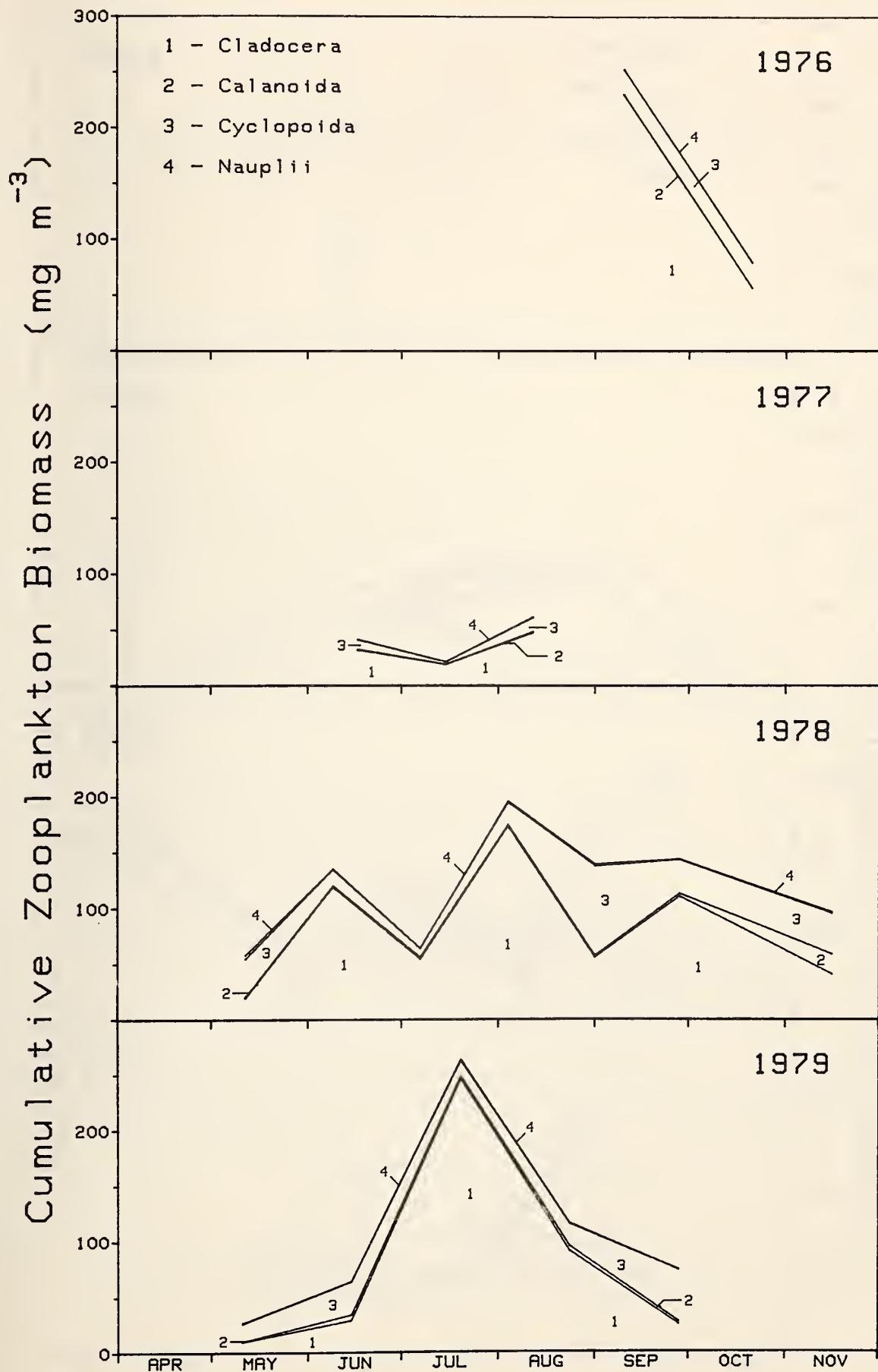


FIGURE 32

LITTLE CLEAR LAKE

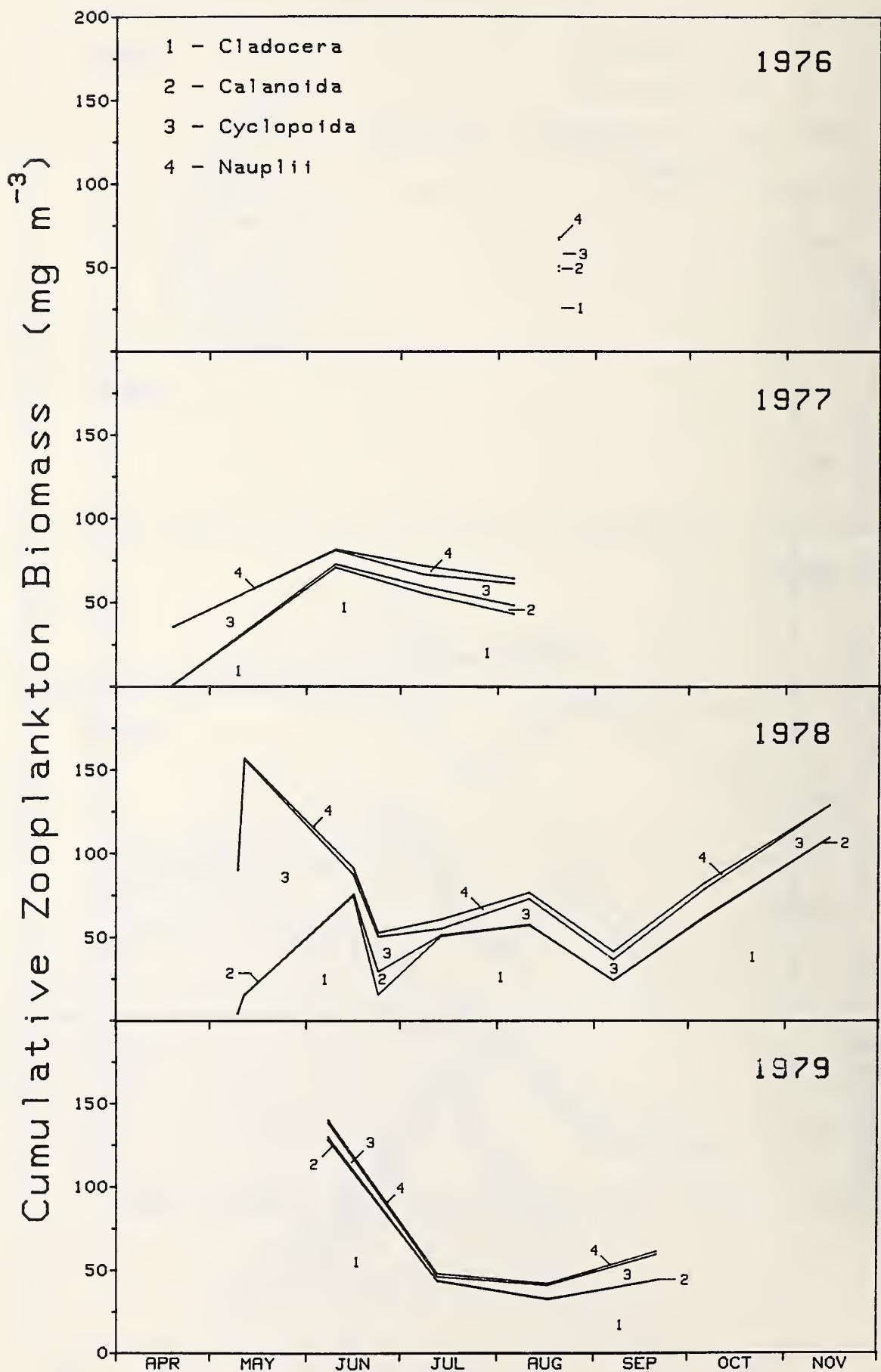


FIGURE 33

SOLITAIRE LAKE

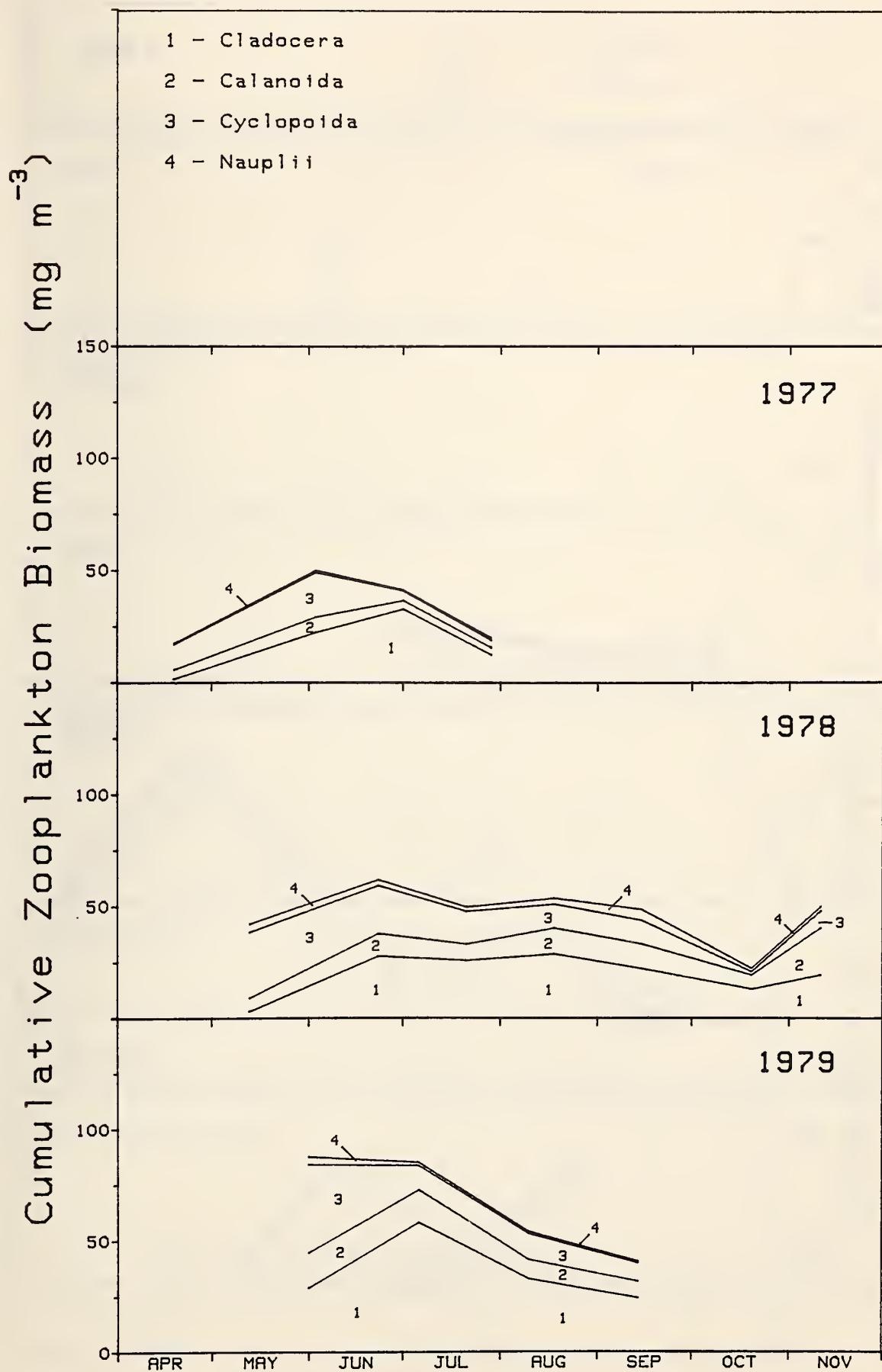


FIGURE 34

WALKER LAKE

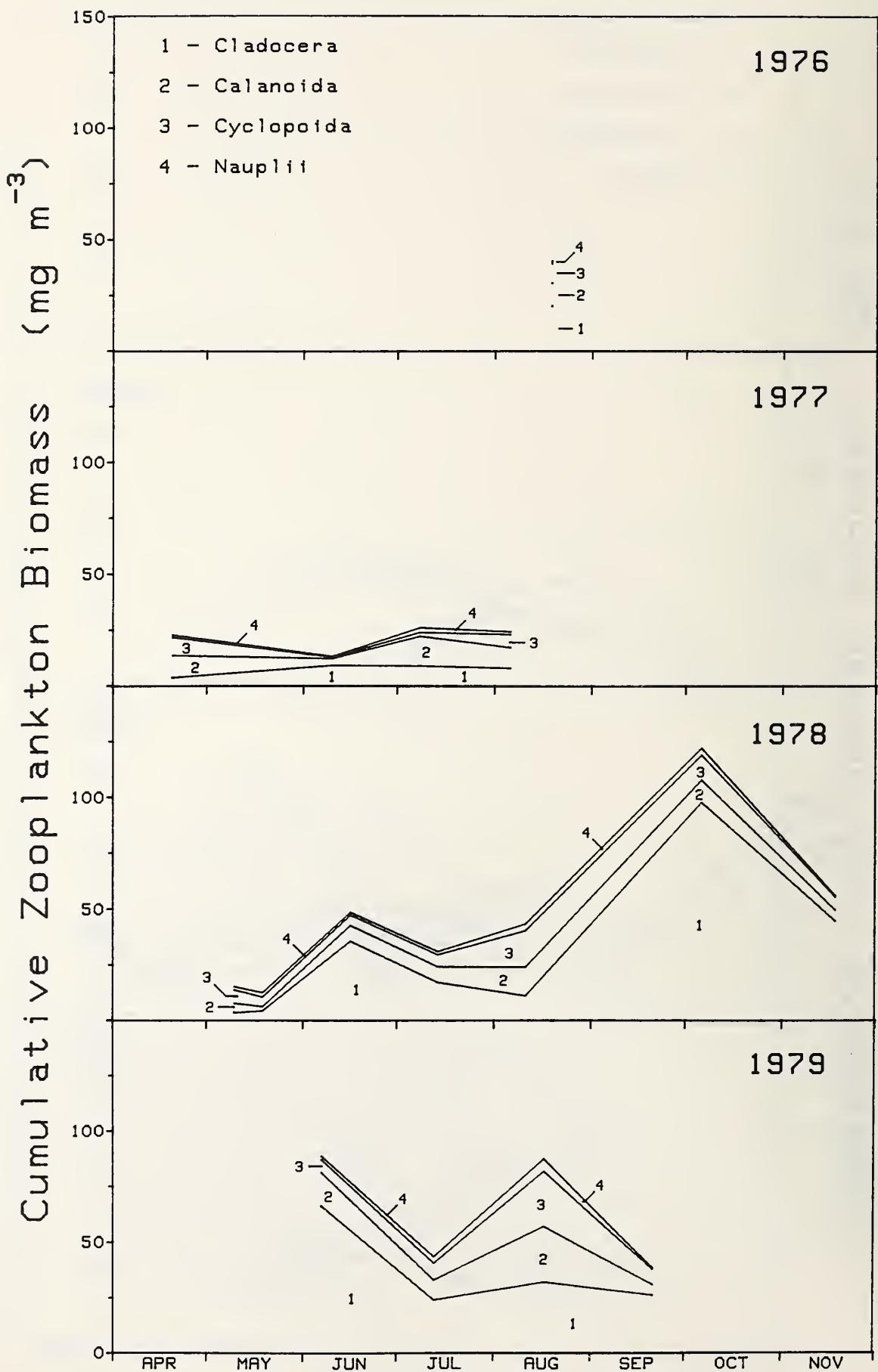


FIGURE 35

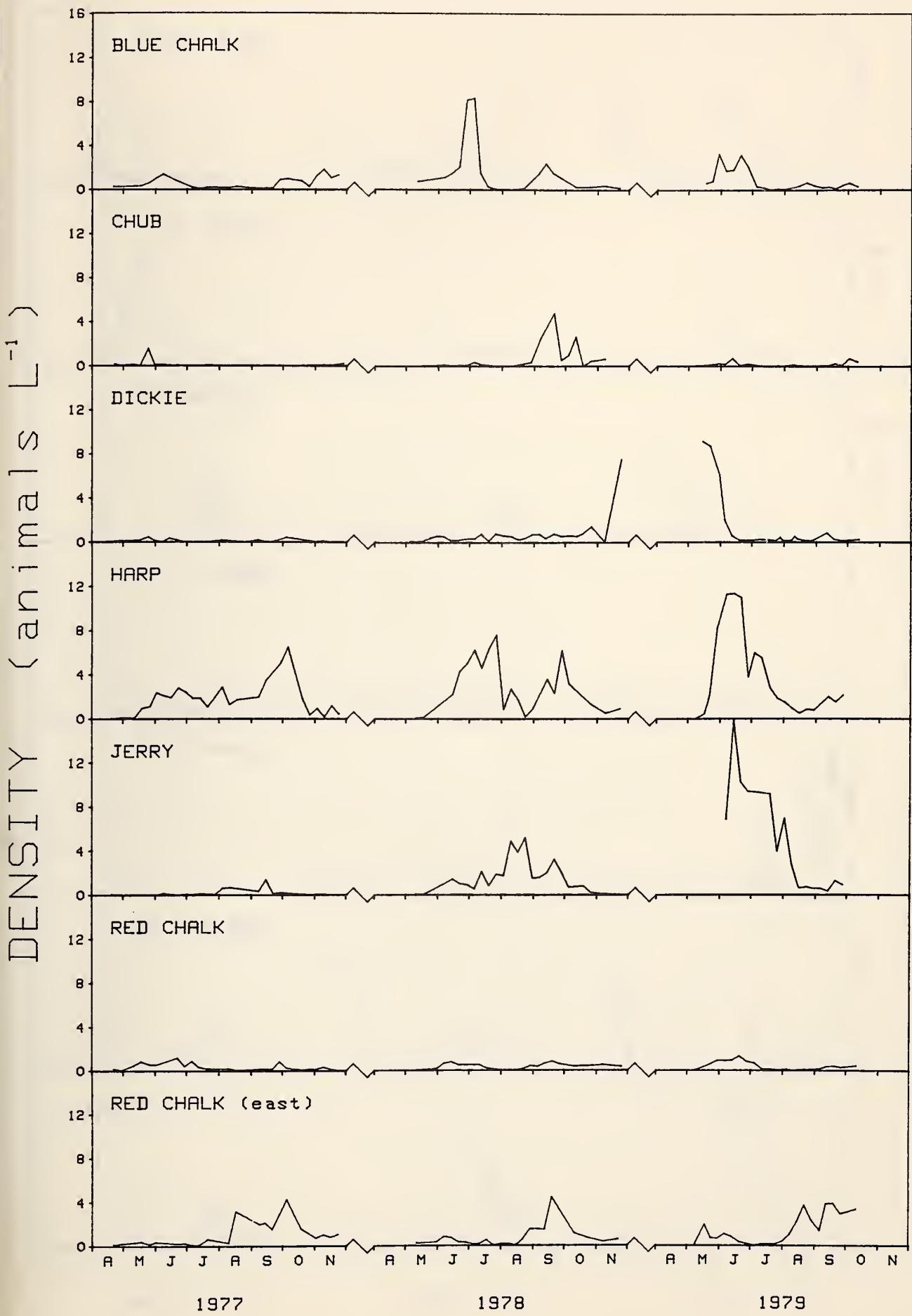
Bosmina longirostris

FIGURE 36

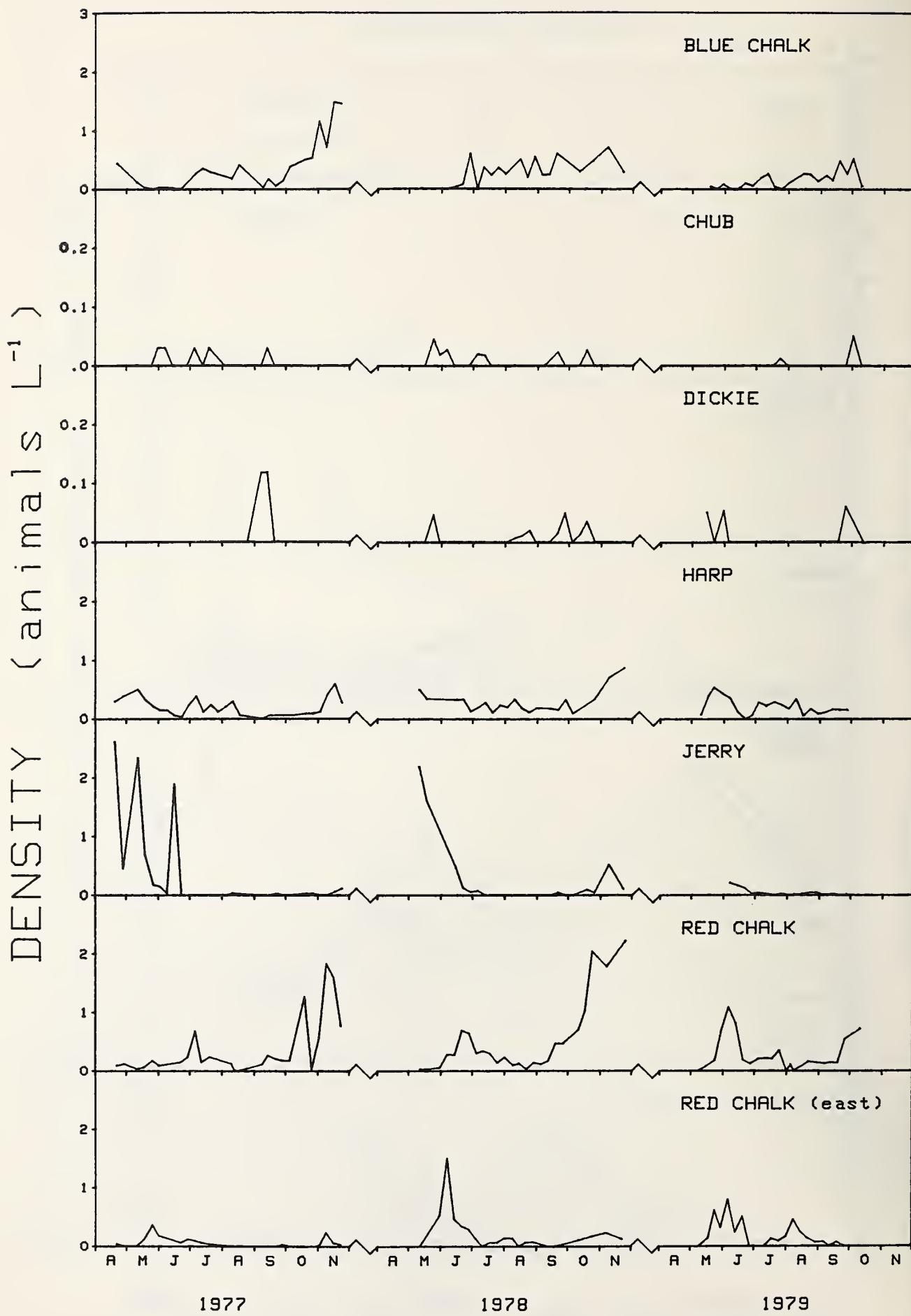
Cyclops bicuspidatus thomasi

FIGURE 37

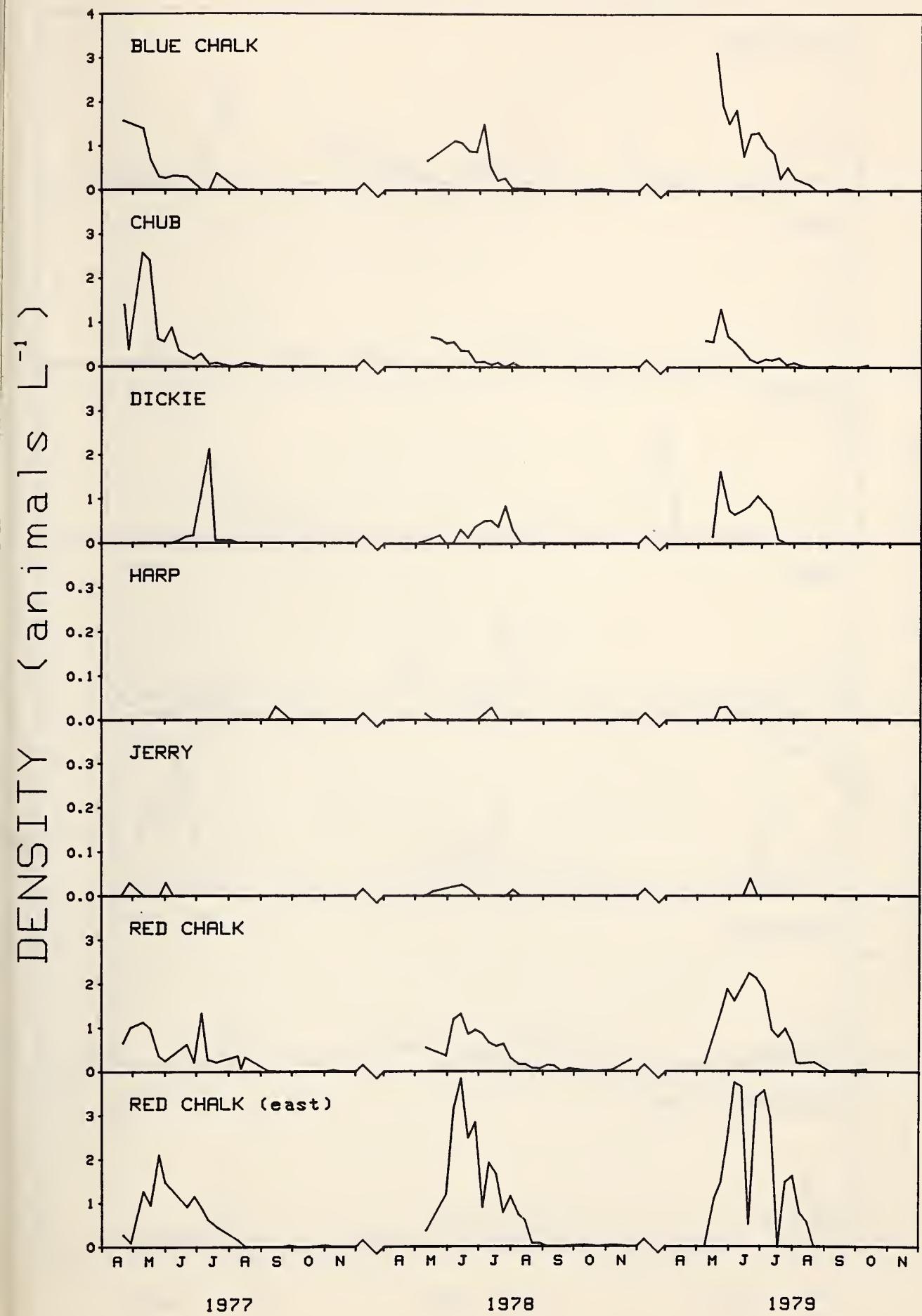
Cyclops scutifer

FIGURE 38

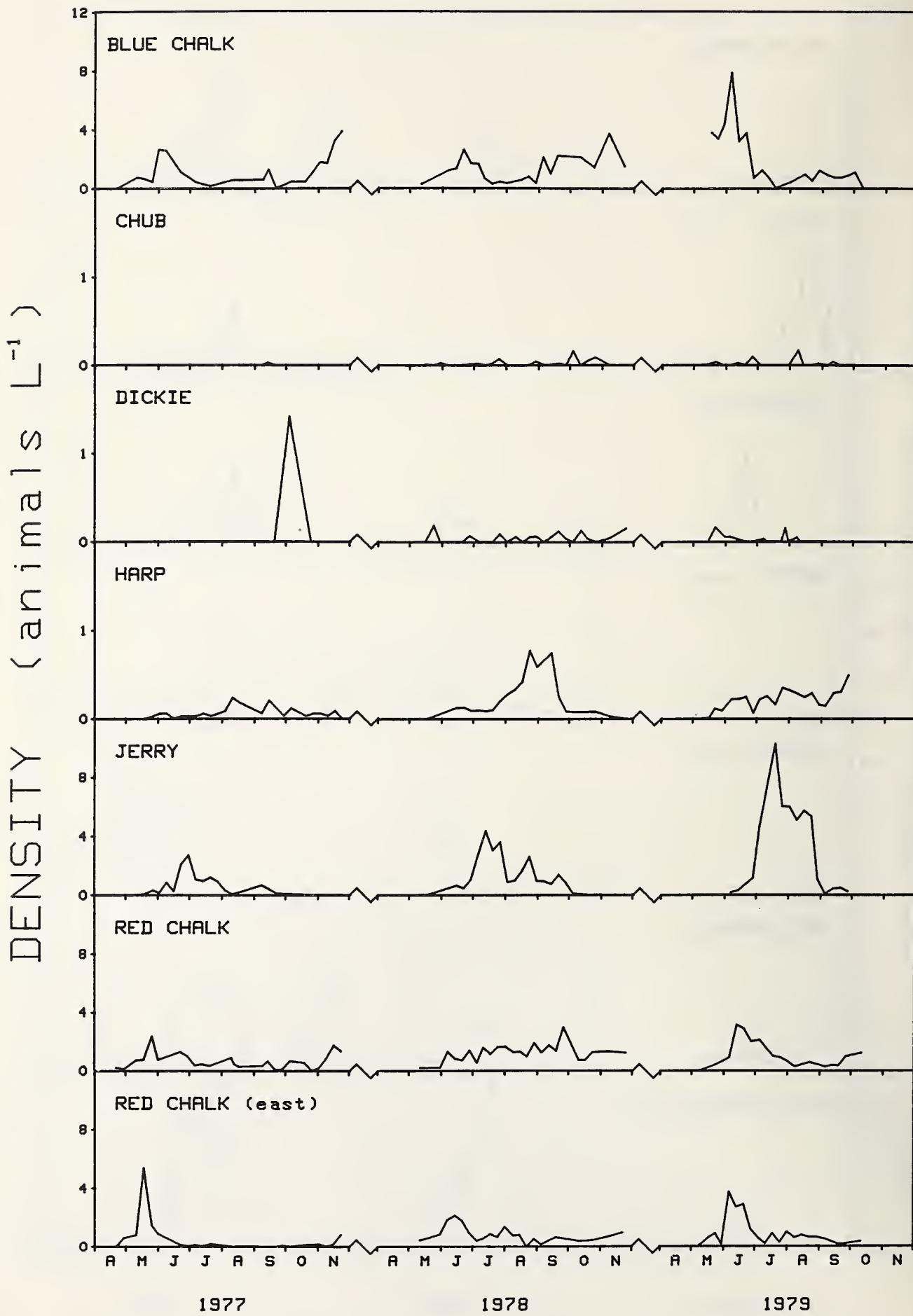
Daphnia galeata mendotae

FIGURE 39

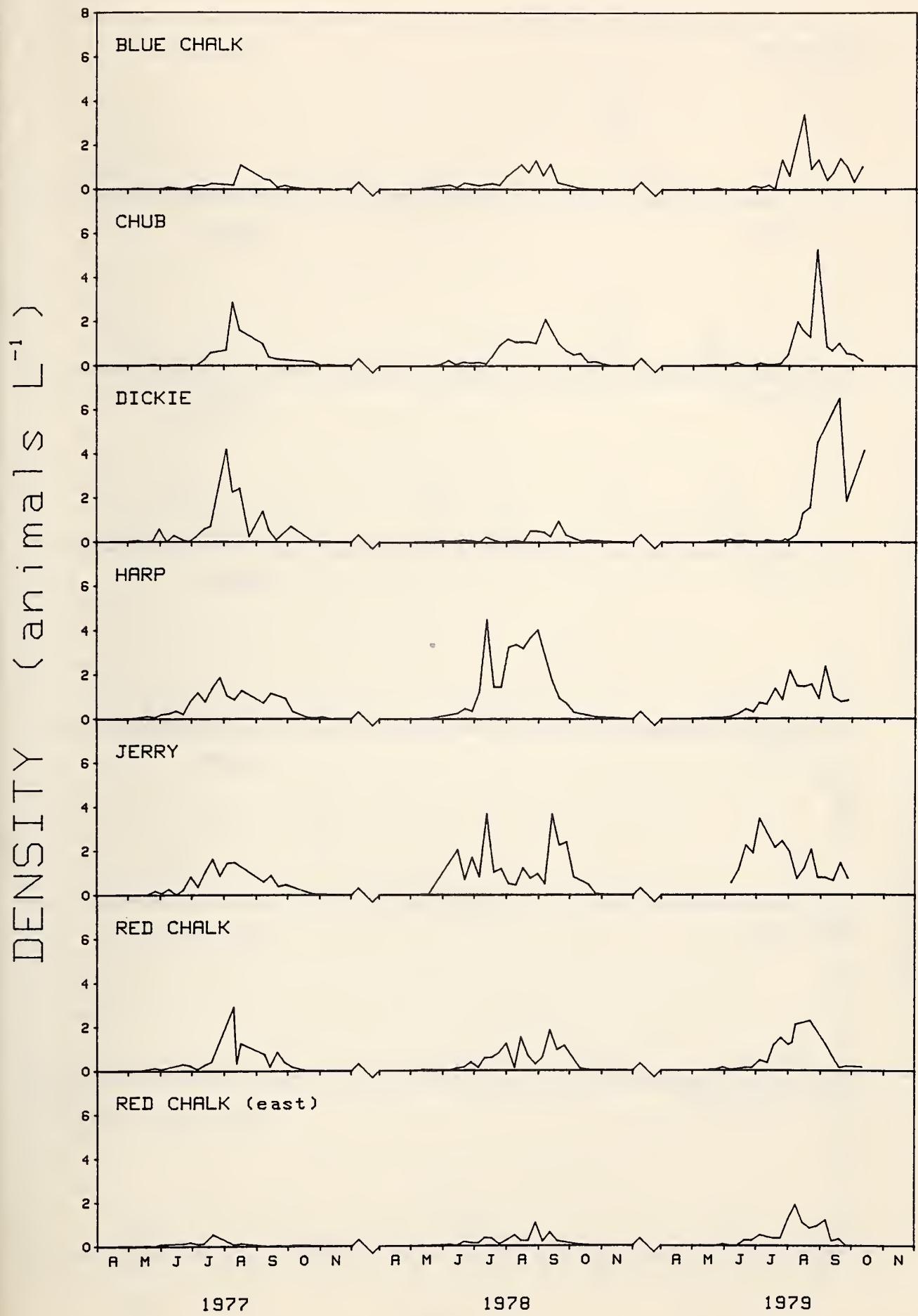
Diaphanosoma sp.

FIGURE 40

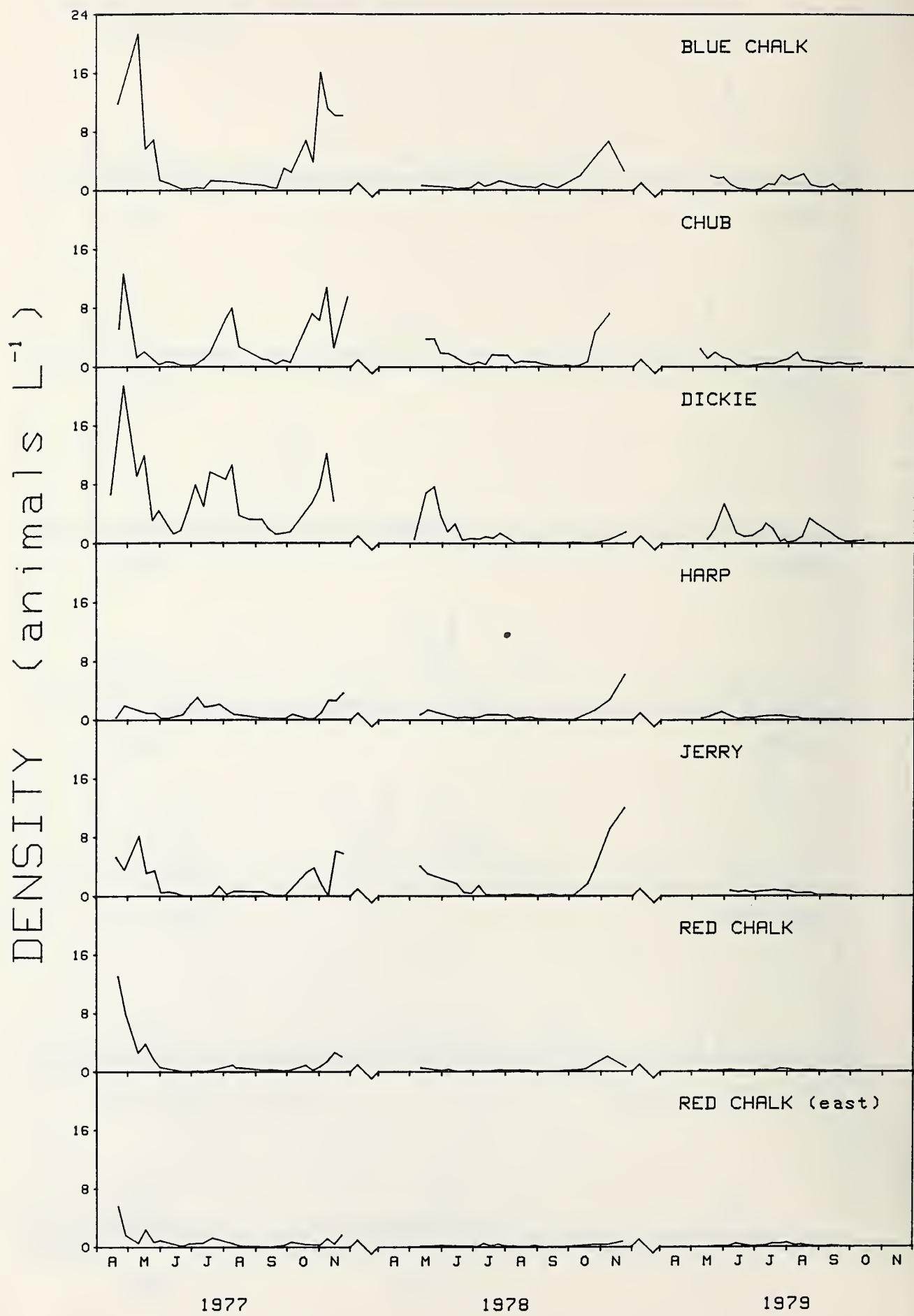
Diaptomus minutus

FIGURE 41

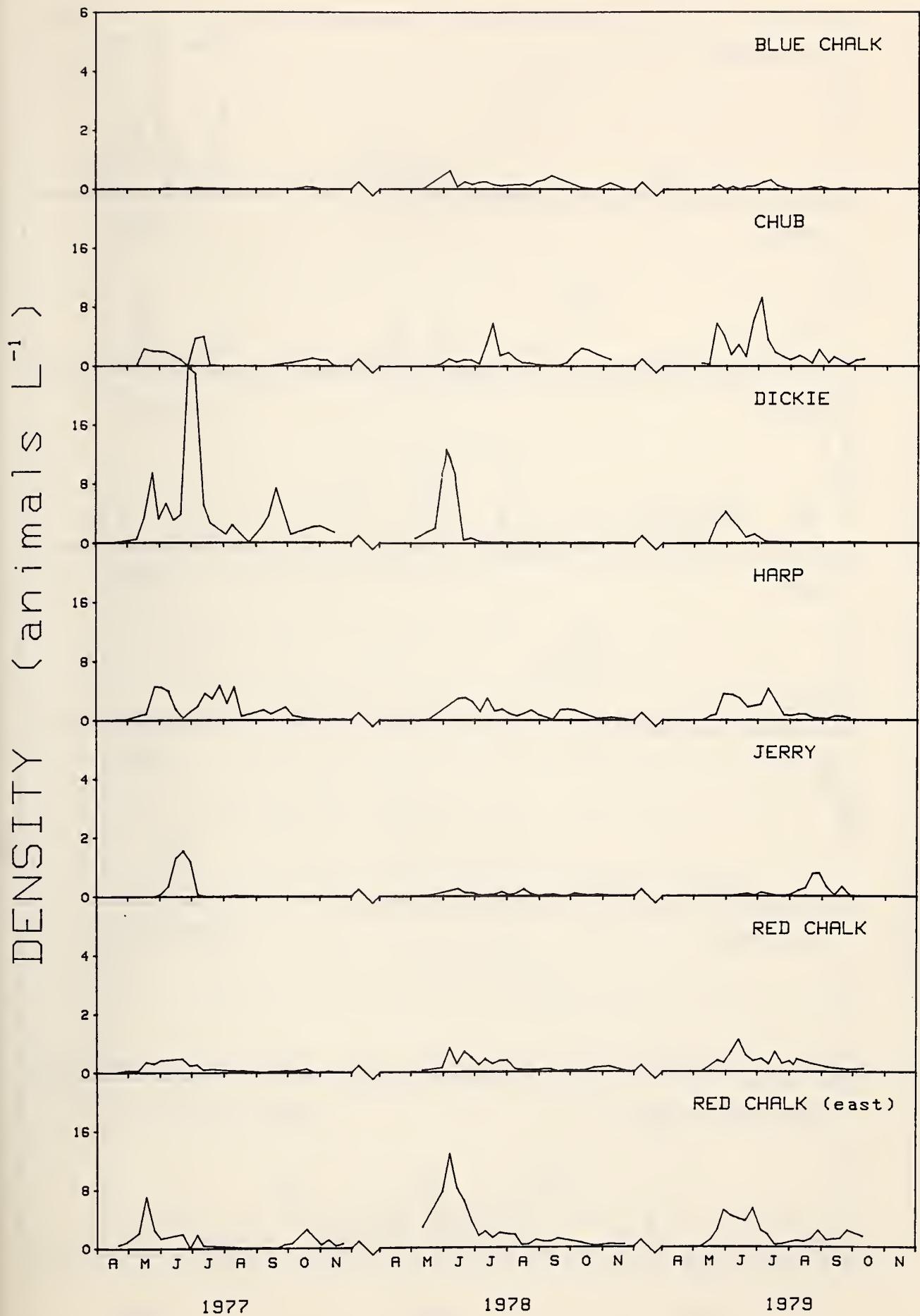
Holopedium gibberum

FIGURE 42

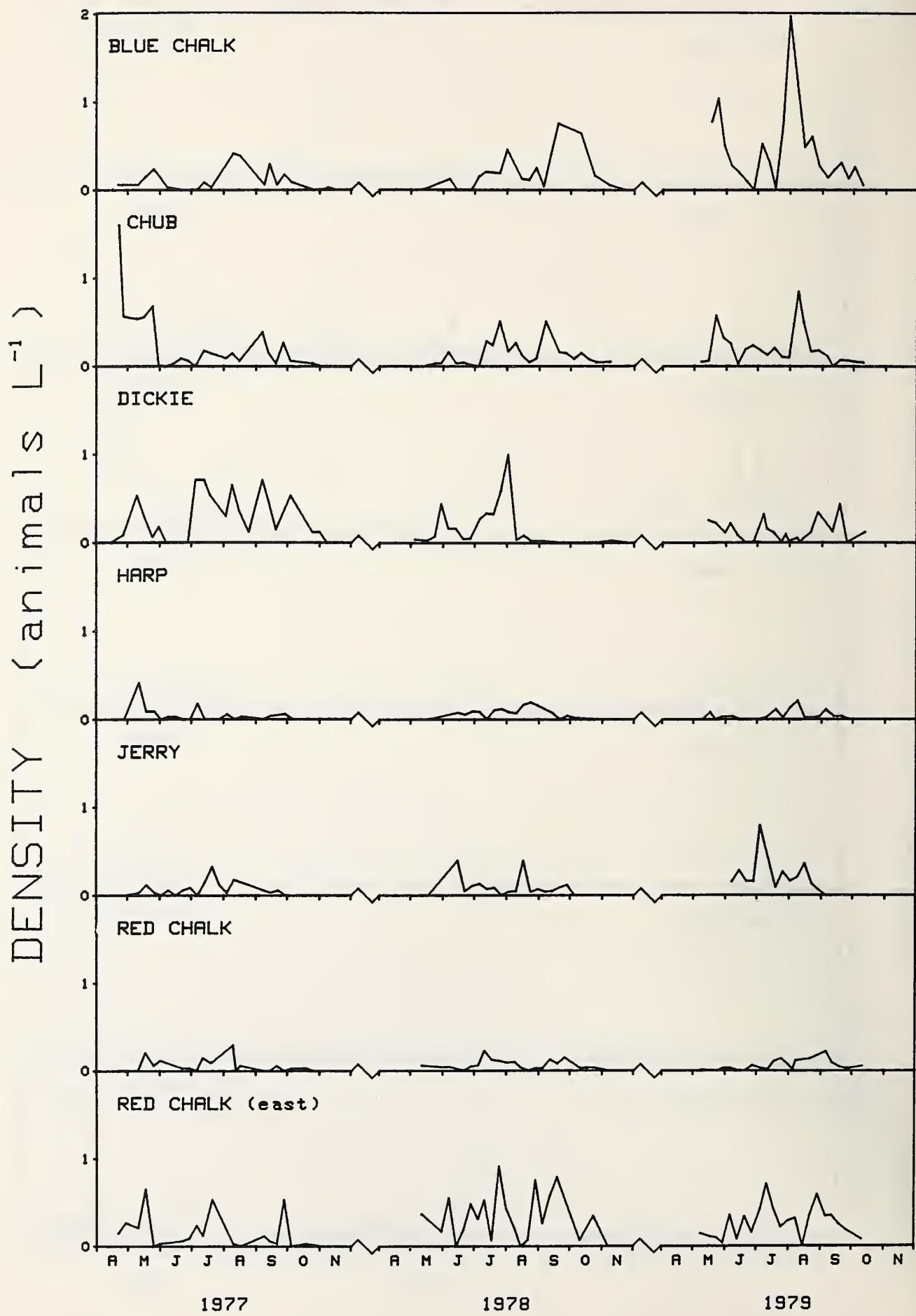
Mesocyclops edax

FIGURE 43

Tropocyclops prasinus mexicanus